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Extracting the Crop

By Lloyd C. Gardner, Delaware, Ohio

Modern Equipment and Methods Simplify this Work

Extracting the honey crop no longer holds the "terror" it once did. No longer aching backs and sore wrists — aching backs from turning hand power extractors; sore wrists from forcing hot water heated uncapping knives through tough combs. Improved methods, better super management, better designed extracting equipment, all have done much to eliminate the toil and drudgery—the stickiness—in the extracting room.

Today large power-driven centrifugal extractors throw out the honey from almost a dozen supers at a single loading as compared to the two, four, or eight frame extractors a quarter of a century ago. Steam heated oscillating power knives slice the cappings from a comb in one motion—even from both sides of the comb at the same time.

Cappings "dried" in the extractor are rendered into wax as fast as they accumulate. And the entire day's run cleaned up, cappings and all, at the close of the eight-hour stretch.

The time was when 40 supers extracted in a single day was something to brag about, but not any more. The one hundred thousand pound crop today disappears from the hives and into the containers in less than two weeks. Two hundred and fifty well filled supers are extracted in eight hours. And the operations have been made so easy that women, in some instances, do the job.

Today the well equipped, well managed extracting house has its production line laid out on the same principle as the modern factory line. Filled supers coming in from the bee yards roll up to the uncapping machines; continue on through the extractors; out of the extractors, and into the supers; onto the trucks and back out to the bee yards for drying.

Special devices for moving the uncapped combs, either stationary units or portable units on wheels, carry the combs to the extractors eliminating "drip" and "sticky" floors. Honey from the extractors flows into baffle tanks which separate particles of broken combs from the stream of honey. And from these tanks, the honey is pumped into specially designed strainers—metal or cloth—and into the storage tanks, or, in some instances, directly into a battery of specially connected storage tanks so designed in their hookup as to actually clarify the honey by sedimentation. From these the honey is drawn off into the bulk containers.

All this, briefly told, may seem easy and quite simple. But a lot of planning—a lot of preparation—must go into the designs and preparation for extracting if many of the old difficulties and unpleasantness are to be avoided.

A Good Building Essential

Of first importance is, of course, a properly designed building which must provide proper floor space in relation to the size of the operations.

Fig. 1. A comb being uncapped

For instance, the 500-colony operator will properly use and need at least 3200 square feet of floor space for his extracting room if he wishes to provide storage space for his crop until it is sold. The 100-colony operator, instead of a fifth as much room, will require approximately one half that amount of floor space.

Next in importance is provision for proper heating; hot and cold running water; plenty of windows and adequate lighting facilities, and the room, above all things, must be dry. Honey is hygroscopic. Extracting in a highly humid room will increase the moisture in the honey.

Extracting equipment for convenience and to conserve floor space should be lined up along a wall, properly spaced to save time and to eliminate extra motions in comb handling. And with sufficient space between the wall and the line of equipment to permit easy passage and cleaning.

In the proper order, the line should begin with the uncapping machines; next, the extractors, behind which are the baffle tanks and to which is attached the honey pump; and next in line, the battery of storage tanks.

Equipment Conveniently Arranged

The capping rendering unit should be located in a specially sealed-off room in one section of the main extracting room when openly discharged steam is used in the rendering process. Otherwise, the unit may conveniently follow in the line after the storage tanks.

Following through with the extracting operations, supers of combs are rolled up on dollies to the uncapping machines; the uncapped combs either stood up on a special turning device or "merry-go-round" easily accessible to the extractors, equipped with a drain-off for the honey liberated from the uncapped combs, or the uncapped combs placed in a movable drip-pan arrangement so constructed that it will hold a full extractor load and can be easily moved between the uncapping machines and the extractors.

The cappings from the combs either fall into a draining tank or box, or into receptacles of sufficient size easily handled and from which they are dumped into the extractor for drying, after which they are rendered into wax.

The loaded extractor is started up gradually, reaching its maximum speed in about seven minutes, at which speed it is permitted to run for another seven minutes, when it is stopped, the empty combs removed, placed back into the supers and run up on dollies to be loaded onto the truck for their trip back to the bee yard.

Honey from the extractors flow by gravity into a specially constructed sump tank equipped with baffles to hold back coarser wax particles, or if the extractors have been elevated onto a platform, a long baffle tank may be set on the floor directly behind and connected by close hookup with the extractors.

From either of these tanks, the honey is elevated by a pump directly into the storage tanks if a system of sedimentation is used, or pumping is onto some sort of straining device before it is received into the storage tanks. And, of course, from these storage tanks, the almost completely clarified honey is drawn off

Fig. 2. A drip pan on wheels filled with uncapped combs

into the bulk containers, usually the five-gallon cans.

Fig. 1 is a close-up view of a comb being uncapped. Note the cappings falling into the drain tank.

Fig. 2, a drip pan on wheels filled with uncapped combs ready for the extractor. Equipment of this sort is indispensable in the extracting process. Without some means of catching liberated honey from the uncapped combs, honey losses would amount to a substantial figure over the extracting period to say nothing of the disagreeable business of having to tread over a sticky floor.

The storage tanks are shown in Fig. 3. Each of these tanks will hold 6000 pounds. Note that they are connected in series with a gate valve between each of them. The sedimentation system of clarification is used here and all the drawing-off of the honey is from number four tank. Honey almost entirely clarified is possible with this sys-

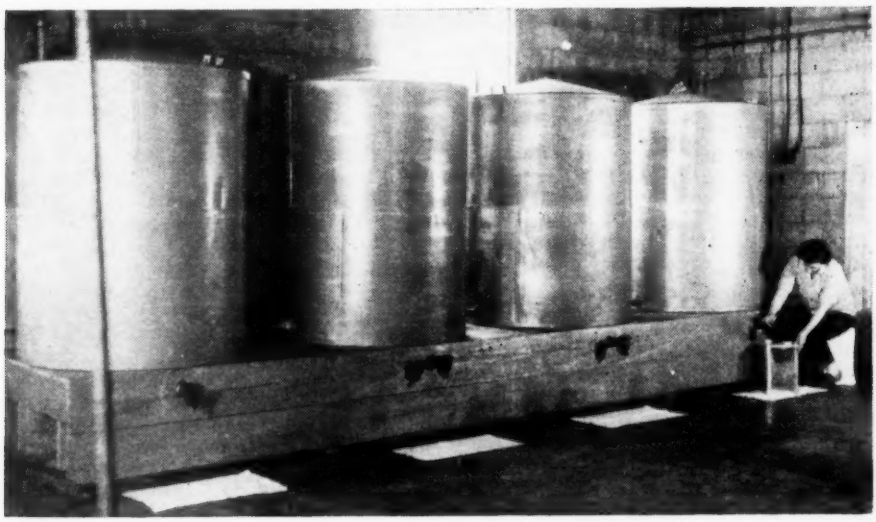

Fig. 3. The storage tanks. Each tank holds 6000 pounds of honey.

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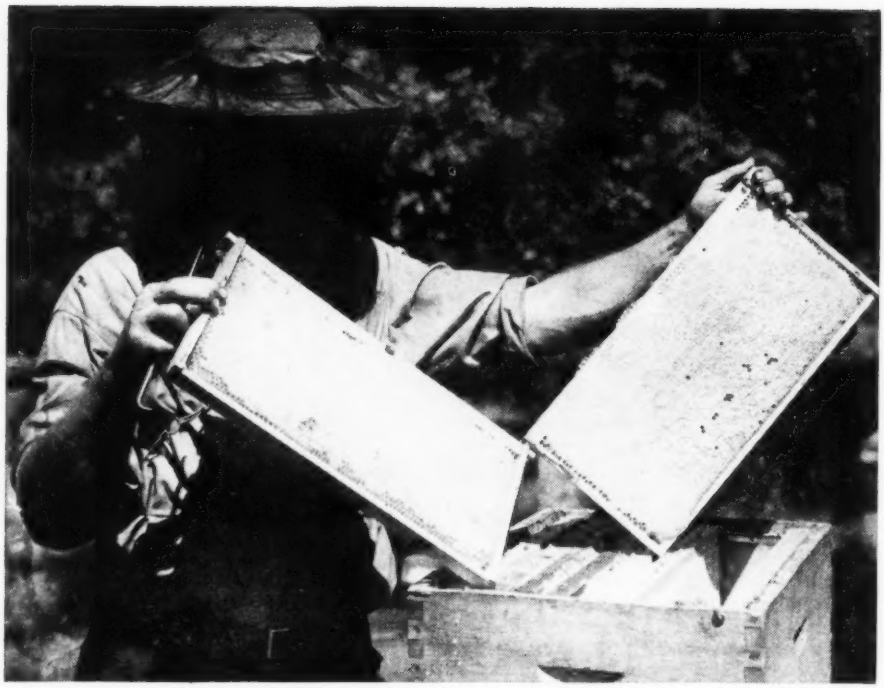


Fig. 4. Combs ready to extract.

tem. However, summer temperatures must be maintained in the extracting room—the honey must not be allowed to chill—for the proper functioning of the system.

Taken in the bee yard, Fig. 4 is a fine illustration of combs ready to be extracted. When the picture was taken, the honey flow had been over for practically ten days. Along the bottom bar of the comb shown in the operator's right hand and to the left in the photograph is shown almost a double row of open cells. On close observation, it will be noted that the cells are empty. Evidently these contained unripened honey, which, at this time, had been removed by the bees.

Have Honey Properly Ripened

Too much cannot be said on the care of honey either before extracting, in the actual process, or after the honey has been extracted. Even with the best of equipment and with expert care, something happens (quite likely in the extractors), to change the character of the honey. While this change may be very slight, nevertheless it does occur and the extracted product, be it ever so good, is never quite like the honey as the bees store it in the combs. And every effort should be exercised to prevent serious damage either in losses of flavor or body.

A frequent and often detrimental error is the extracting of "green" or unripened honey. Combs and supers should not be removed from the bees until the honey has been thoroughly ripened. During the past few years, more and more fermenting honey has been coming into the markets. The statement has been made that even a few spoonfuls of "green" nectar mixed into several hundred pounds of ripened honey is sufficient to start fermentation.

If this be true, and it has yet to be contradicted, we may reasonably assume that the increase of fermented honey reaching the markets is entirely because of "green" nectar getting into the honey through the extracting process.

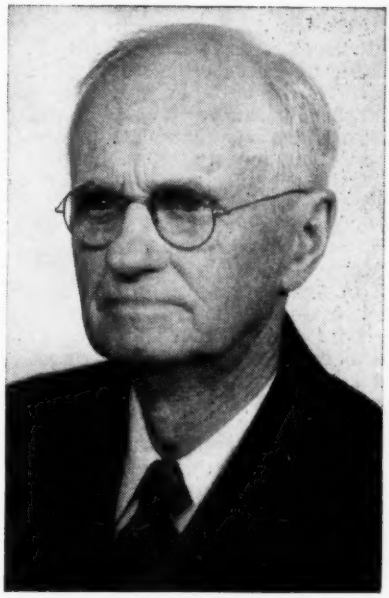
Fermenting off-grade honey does not build markets. Only the best, no difference what the type or kind, should move off the beekeepers' premises. And whatever the quality, it may be largely influenced, good or bad, in the extracting room.

Traps and Excluders—Do They Hinder Bees?

By C. H. Pease, New Canaan, Connecticut

If there is another beekeeper in the United States whose hives wear both traps and excluders during all of the swarming season I have never heard of him. However, as my traps and excluders have helped me for several years to harvest approximately twice as much honey, per colony average, as this same average for not only our own state but for all of New England, I shall continue to use them. For my own safeguard against losing swarms, or the work and risk connected with climbing trees to get them—and for checking up on supersedures and getting drones out of the hives—I use traps, but not the Alley traps sold by supply dealers. I spent 14 years experimenting, made dozens of models, none of which worked perfectly until the last one two years ago. As I am on the home stretch toward my 82nd birthday, climbing trees and chasing swarms does not appeal to me as it once did. Of course, any trap is a nuisance in an outyard, but I am talking to backlotters whose bees are in their back yards where they can see them every day. I not only lose no swarms but do not have to watch for them. If they swarm while I am away they come back into the hive and the traps tell me about it when I return. Then I either hive them or attend to them as I see fit, at **my** convenience—not theirs. To learn what has been going on it is only necessary to walk through the yard in the late afternoon and glance at the top of the traps. This takes but a few minutes at home (I have done it with 20 colonies in three minutes) but it can't be done at outyards.

My objection to the Alley trap is: The upper compartment is usually well stocked with drones and some workers and if a swarm goes out when you are not looking, the queen will also be in that compartment and so engulfed in the mob of other bees that she can be easily overlooked because the only means of observation into the dark chamber through the wire front is very obscure, and the chances are good that she may die there. It happened to me years ago. Then when the virgin starts out to mate she too gets caught and suffers the same fate. You then have a hopelessly queenless colony which may develop laying workers and perhaps result in the destruction of the colony. Of course, if you happen to be there when they swarm, and the Alley trap is on, you can attend to them all right, but few people can afford to spend their time watching for swarms which many times do not come out while they are watching. Beekeepers with outyards have no use for traps, and they have good reason for it—but I am talking to small beekeepers like myself.



C. H. Pease

The Pros and Cons of Traps and Excluders

To prove that there are two sides to this question, as to every other, Owen Clay of Hudson, Indiana, in the October, 1946, Modern Beekeeping, said that "the best place for queen excluders is under the cover where they are out of the way of the bees", and there are many others who claim that excluders and traps are nuisances which hinder the bees. However, I tried it once without excluders on colonies run-

XUM

ning for comb honey and harvested an elegant crop of spoiled sections in the first supers over the brood chambers by cells filled with pollen and brood. At a meeting of our State Beekeepers' Association, F. R. Bolster of Forestville stated that he tried it once and had not only considerable pollen and brood in the sections but a queen cell in one of them. The no-excluder system may work in the western states but not with me in New England.

Do Traps and Excluders Hinder the Working of Bees?

Many beekeepers object to the use of traps and excluders because they claim that crawling through the bars slows down their work. It has been a much-debated question, but I have made a close study of it, having spent hours watching bees entering hives through traps, and am convinced that the hindering amounts to practically nothing. If it does, how could I get, as I did in 1945, an average of 76½ pounds per colony from my whole apiary when the average per-colony production in our state was only 35 pounds, and is never over 40, and from my best colony I took exactly 142 pounds surplus, with both traps and excluders on the hives all through the swarming season — about ten weeks?

But don't take my word for it. Certainly no one can question the opinion of an authority like the late George S. Demuth, who for 13 years preceding his death was editor of Gleanings in Bee Culture, and of whom the senior editor of Gleanings, E. R. Root, wrote: "The facts of science or bee behavior do not change, and if any man in this or any country could accurately interpret those facts of bee behavior into dollars and cents it was George S. Demuth. He made bees pay. The simple fact was that he was ahead of his time." Here are a few of Mr. Demuth's ideas relative to the hindrance of bees going through traps and excluders:

In the June, 1924, issue of Gleanings, page 383, Mr. Demuth said: "The bees soon become accustomed to the trap and pass through the openings readily." In the same issue on page 355, referring to the hindrance of bees going through the openings in the excluder (which are the same as in the trap) Mr. Demuth said: "Bees being compelled to creep through the small openings in the excluder, experimental evidence thus far indicates that this does not constitute a barrier to the bees." And again in his book "Five Hundred Answers to Bee Questions", Mr. Demuth said: "If other conditions are equal there should be no difference in the amount of honey stored when the excluder is used. In fact, other methods of keeping the queen out of the supers may reduce the amount of honey stored more than an excluder could possibly reduce it." And still again, in Gleanings for August, 1927, page 535, Mr. Demuth told us that "It is doubtful if the queen excluder hinders the work in the supers in any way. Strong colonies apparently work just as freely in supers above an excluder as though no excluder were present, as you will find if you try out carefully an experiment with colonies arranged both ways."

Inasmuch as Mr. Demuth had a much more extensive experience than I, and my observations over a period of 29 years coincide exactly with his, I can see no reason for discarding my traps and excluders.

I have observed that those with whom I have discussed the pros and cons of traps and excluders base their objections solely on theories, not experience, nor by Mr. Demuth's method of experimenting "with colonies arranged both ways", or by following the advice of one of the country's best old-time beekeepers, Dr. Miller, who, when he wanted to test a theory "took it to the bees". Is not positive knowledge from the practical experience of such authorities as the late George S. Demuth and Dr. Miller better than the guesswork of mere theory?

As an old saying goes: "A person convinced against his will is of the same opinion still", and I don't expect that one producer who **thinks** that traps and excluders are a detriment in the production of honey will exchange his theory for the fact as proved by the experiences of the most reliable authorities because, as C. F. Kettering said: "You can send a message around the world in one-seventh of a second, yet it may take years to force a simple idea through a quarter-inch of the human skull."

The Legume Seed Research Laboratory

Sponsored by the U. S. Dept. of Agriculture cooperating with Ohio State University and Ohio Agricultural Experiment Station

Legume Seed Research Laboratory, Ohio State University Farm, Columbus, Ohio.

It is a fortunate thing for beekeepers in the central states that clovers and alfalfa are practically indispensable on the farms where they keep their bees. Farmers grow legumes because they furnish organic matter to improve the texture and productivity of the soil and they make good feed for livestock. There seems to be no other economical way to maintain the productivity of many of these farms.

In the eastern United States a serious threat to the growing of legumes has been the shortage of clover seed of adapted varieties. In Ohio, seed yields on the average have fallen to about 1 bushel per acre for red clover, and 1.6 bushels for alsike clover. The specialists tell us that red clover could yield 12 bushels, and alsike clover 20 bushels, if all conditions were favorable. They say that 4 bushels of red clover or 8 bushels of alsike are entirely practical. Years ago these yields were obtained. Many things have been blamed for the decline in recent years, one being the decline in numbers of bumblebees and solitary bees.

The reasons for the decline in yields and their correction are the problems of the men at the Legume Seed Research Laboratory at Columbus, Ohio. After nearly two years in temporary quarters in the city, the laboratory has been moved to the Ohio State University Farm near the experimental plots. Work on this project was begun early in 1947 by the U. S. Department of Agriculture cooperating with the University and the Ohio Agricultural Experiment Station. The University has provided quarters and experimental plots, and the Department furnishes the men to do the research work.

Specialists in agronomy, entomology, and pollination were assigned to the work with the idea that the various phases could be carried on concurrently to give a well-balanced program. Problems the farmer meets in growing a strong, vigorous plant capable of producing a good crop of seed are being directed by **John G. Dean, Agronomist,** of Kansas and who has made experimental studies in legumes in Kansas, Nebraska, and Ohio. With his assistant, **Russell Secrest,** he is working on alfalfa breeding and seed production as well as on red clover seed production. Associated with Mr. Dean is **Dr. C. A. Swanson** of the Botany Department of the University who developed a method of measuring red clover nectar secretion in 1948. **Reginald Shuel,** a graduate student at the University, working under Prof. Swanson's direction, is continuing the nectar secretion investigations.

Like nearly everything else the farmer grows, legumes have their own pests which do a lot of damage. Entomologist **B. A. App** has found

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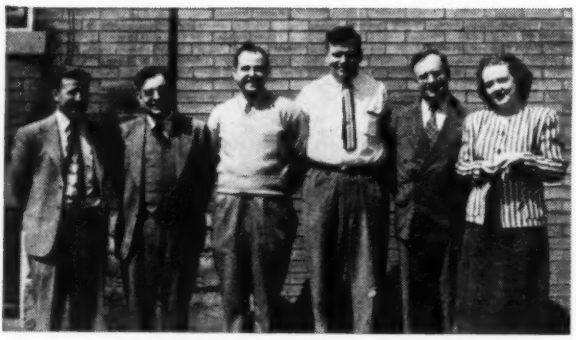


Workers at Legume Seed Research Laboratory, Columbus, Ohio. Left to right: B. A. App, control of insects on red clover; W. E. Dunham, insect pollination; John Knierim, insect pollination; John G. Dean, agronomic aspects of seed production; A. W. Woodrow, insect pollination; Irma A. Bilderback, secretary. Absent from picture: Russell Secrest, agronomist; Reginald Shuel, plant physiologist.

over a dozen kinds of insects living at the expense of the clover plant. About half of these have become very numerous. Many of them can live on other plants, too. Some, like grasshoppers, are large while others are small enough to develop within one clover seed. Besides experiments to learn about the damage insects may do to the clover plant, he is now testing many of the new insecticides such as DDT for their value in controlling the injurious insects without harming the pollinators. Mr. App has had wide entomological experience in the southern states, Puerto Rico, and Ohio. He came to Columbus from the White-fringe Beetle Research program in Georgia.

While beekeepers may not grow the legumes themselves, they are vitally interested because of the important part their bees play in the life of the plant through pollination. Red clover is entirely dependent on insects, mainly bees, to carry the pollen from flower to flower and no seed can be obtained without them. Because of the long corolla tube, red clover presents special problems in pollination by honey bees, although it is eagerly sought out by bumblebees. Sometimes honey bees collect nectar from it; at other times only pollen.

How to make the best use of honey bees for the pollination job was the task given to **A. W. Woodrow** and **W. E. Dunham** of the Division of Bee Culture. Previous to the new work in Columbus, Dr. Woodrow had been with the Division since 1935 at Laramie, Wyoming, and Davis, California, working on American foulbrood, beeswax production, bee poisoning, and pollen studies.

Dr. Dunham is well known to beekeepers because of his numerous articles in bee journals and his work as Extension Apiarist and Professor of Apiculture at the University for many years. He has retained his teaching work at the University while doing research in pollination. With many years of beekeeping experience he is an ardent student of bee behavior and a leader in the field of legume pollination. His work has shown that in nearly all red clover fields observed, the burden of the pollination job falls on the honey bee.

John Knierim, a graduate student in Apiculture at the University, is making a special examination of pollens collected by bees as an index to their pollinating activity. He is also interested in bumble bees and is making an effort to induce queens to build nests in captivity.

The only worker in the laboratory who takes an active part in all the programs under way is **Miss Irma Bilderback.** She has a difficult job of being an efficient secretary to so many men.

The laboratory people have enjoyed the finest kind of cooperation with the University, and the work is only partly covered without reference to the contributions made by University people. Warren C. Shaw and Richard M. Hiatt of the Agronomy Department have worked closely with laboratory personnel on red clover projects. Others, including Dean L. L. Rummell, Ralph Bazler, and Profs. Willard, Volk, Miller, Reese, Davidson, and Swanson have given the project their whole-hearted support and assistance.

Beekeepers who have the opportunity will find it well worth while to visit the laboratory to see the work in progress.

A Method of Swarm Control

By Geo. W. Phillips, Saratoga, California

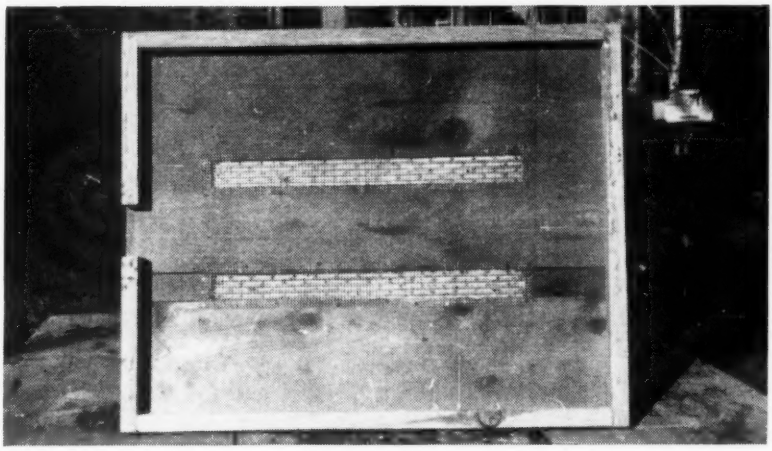


Fig. 1.

In honey production swarm control is essential. Because of uncontrolled swarming how many a fine harvest has gone a-glimmering. In different localities this problem presents different aspects. In Jamaica, B.W.I., for instance, the profitable flow is the fine logwood honey, and this comes early — December and January. The flow is so heavy that it swamps the swarming impulse. Sometimes it also definitely retards brood rearing by filling the brood combs almost completely with honey. To prevent the brood nest from becoming honey-logged one has to be constantly removing the filled combs to the supers and replacing with sheets of foundation. In February when this main flow is finished and the mild flow from fruit, etc., begins, then swarming breaks out all over. By this time, however, the big crop is harvested and to that extent disaster from swarming is averted.

Here in Saratoga, California, the matter is entirely different. There is no honey flow heavy enough to swamp swarming—just a light continuous dribble of nectar from myriad sources—a dribble lasting from January to August, and thus from January to August the swarming problem is ever present. You solve it or your surplus is gone.

Now to this problem of swarming there are two methods of approach:

(1) Swarm Prevention. This aims to check the fever before it gains headway and to this end a great many technics have been adopted. Nearly 50 years ago "shook swarming" was the vogue. Requeening, inducing temporary queenlessness, removal of brood, draining off some of the colonies' surplus strength — these, and similar technics, have been practiced with varying results. Many of these methods are quite laborious and in large apiaries the labor cost is almost prohibitive.

In swarm prevention two things may well be given consideration. First, every effort should be made to cope with its incipient stages. Don't let the thing get started. This is much easier in small than in large apiaries. With me an apiary of about five colonies went many years without a single swarm. The larger the apiary the more difficult the problem. Swarming in fact seems highly contagious, and once get it well started it will spread from colony to colony until the entire apiary becomes a bedlam. Every effort should be made to control beginnings.

This suggests the second factor: Room. Congestion should be carefully avoided. Spreading of brood must, however, be practiced with caution. Breaking up of the cluster's geometric pattern may not only hamper the colony's efficient func-

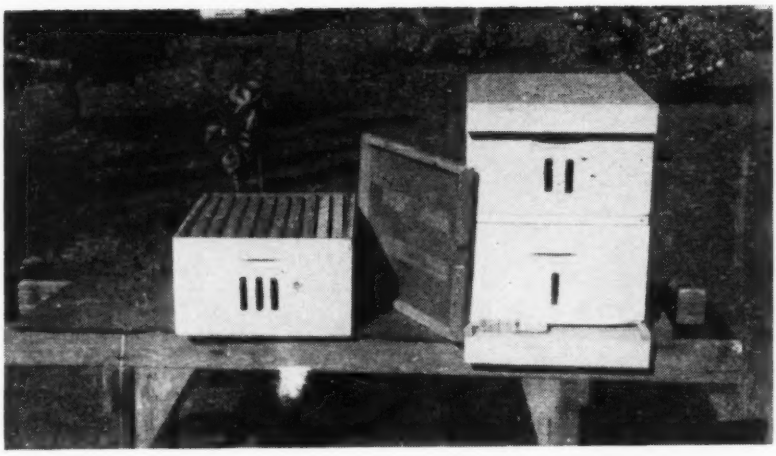


Fig. 2

tioning but may even result in the chilling of brood. A safer way is to leave the cluster intact and add room outside the cluster. This in the standard eight or ten frame hive may mean supplying extra brood stories, for while any sort of room tends to discourage swarming it is more effective when it involves the brood nest. Usually this means making a double brood nest—that is, adding a standard super of foundation as a second story and allowing the queen unrestricted access to the same. When she gets too crowded downstairs she will move upstairs and there take over. This is the usual procedure, but another method suggests itself, although, truth to tell, I have not given it exhaustive test. This summer I shall try it again. It is to put the queen and all her brood in the second story, fill the first story with foundation and build the brood nest from up to down rather than from down to up.

None of these methods, however, will prove quite effective once swarming gets out of hand. Then throughout the apiary a sort of insanity seems to run its destined course.

When swarm prevention ceases then our second method comes into play:

(2) Swarm Control. Failing here, your honey crop becomes problematical. I am happy to describe a system used by me during the 1948 season—a system which not only prevents unwanted increase but hinders any appreciable diminution of your honey crop.

We assume first of all that your queens are clipped. Here some of us in California must meet a complication. Where colonies are held close to the ground the salvaging of clipped queens in prime swarming is simple. With us in this locality, however, bees must be placed on **stands which are girdled with Tanglefoot.** Ants will venture to attack the strongest colonies while weaker ones are an easy prey. With colonies on two-foot stands it is so easy to lose your clipped queen, as, emerging with her prime swarm, she falls to the ground. If you are on hand—OK. If not she is apt in a few minutes to crawl away solitarily and be lost.

Now, let me present my method of control. I must emphasize the necessity of having your equipment in readiness. This really involves three things: Queen cages, a number of hive bodies complete with full frames of foundation, and some especially constructed bottom boards. Because these latter are so important let me describe them in detail.

They should be made of light ⅜-inch stuff, and because their use is only temporary the alighting board feature may be dispensed with. In brief, just visualize a regular bee-escape board with a 3-inch strip cut from the back end of its rim, and you have the picture. Into this board cut lengthwise two slots each 1 inch wide and about 10 inches long. On the under side of these openings nail strips of perforated zinc honey board, and on the upper side nail strips of wirecloth—preferably ⅛-

inch hardware cloth. Fig. 1 illustrates this board clearly enough.

Now the prime swarm is issuing. This is the procedure: (1) Pick up and cage the clipped queen and lay her on the alighting board. (2) Lift the brood nest "I", Fig. 2, from its bottom board and lay it to one side. (3) Replace brood nest "I" with hive body "III", filled with frames of foundation. (4) Put new bottom board, Fig. 1, on top of super "II", with entrance at back of hive. (5) Place original brood nest "I" on top of this upper bottom board. (6) Release clipped queen and let her run in with returning swarm. (7) Put on cover and forget your troubles. The arrangement of the three hive bodies as they now stand is shown in Fig. 3.

Notice that I have said nothing about destroying surplus queen cells. This is seldom necessary because practically all the colony's working force will return to their former location "III", leaving the original brood nest "I" so depleted that swarming fever cools completely. There is no after-swarming. The

Fig. 3.

first hatched virgin will "rule" and surplus cells will be destroyed. Meanwhile the big working force now concentrated in the new brood nest "III" really gets things done. In a very few days all new combs will be drawn and filled with eggs and brood. (Caution: No brood must be placed in "II" or work in the new brood nest "III" will be definitely retarded.)

Meanwhile, upstairs in "I" your virgin colony will be gaining momentum. For the first day or so very few bees will be returning to the back entrance, Fig. 4, but gradually as new bees hatch the number will increase and normality prevail above. In from 11 to 14 days the virgin queen will be fertilized and laying. Let matters remain like this until this upper story has a frame or two of unsealed brood, then rip off the wire screen from your upper bottom board leaving on only the perforated zinc, and thus permitting the entire colony to integrate. The strips of honey board between "I" and "II" and the regular queen excluder between "III" and "II" will effectively separate

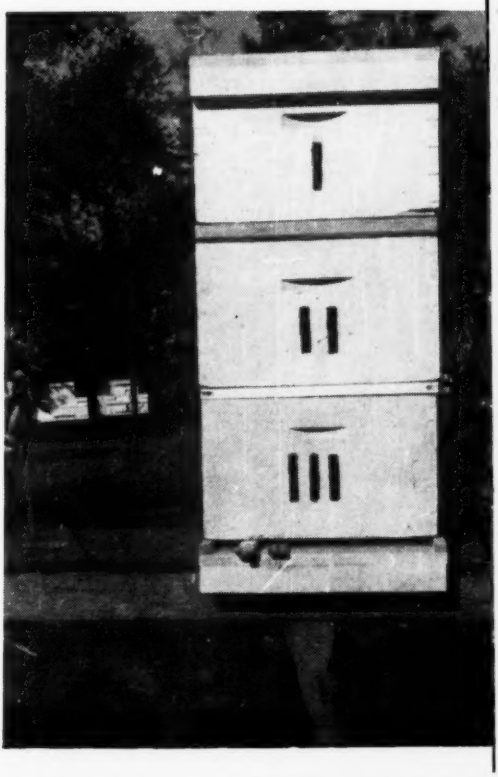


Fig. 4.

(Continued on page 463)

Neglected Caucasians?

By H. H. Root

One of the very first to recognize the advantages of the Italian bees over the old-fashioned blacks was L. L. Langstroth. Italianizing, as it is called, was generally recommended and because it was so easy to distinguish between the Italians and the blacks, the original black bees have largely disappeared in most localities except parts of the South.

Caucasian bees are not new. While never adopted as generally as the Italians have been, nevertheless for 50 years Caucasians have had their advocates. One of the greatest friends of Caucasians was the late L. H. Benninghof of Columbus, Ohio. A multi-carload producer, Mr. Benninghof's description of his bees was terse: "They are better workers, cap their honey whiter, and you do not have to waste all your time puffing smoke. Got to handle them different from Italians, though, and you need a good strong hive tool." This last he added with a significant wink.

Mr. Benninghof's thousand colonies of Caucasians taught him what many others have learned before and since, that these bees, along with their splendid qualities, have some bad qualities. They are excessive propolizers. In fact, if an entrance is too large they will automatically close it to a point to their liking. They not only propolize the entrances but the frames as well—in some localities, of course, more than in others. This is what Mr. Benninghof meant by his reference to a good strong hive tool.

In localities where there are a lot of black bees it is difficult to keep Caucasians pure, for it is hard to know whether the bees are mixed with the blacks. There are not as many black bees as there used to be, so this objection is not as serious today as it was 50 years ago.

Other conditions are changing. There is probably the greatest concentration of population in cities that this country has ever known. To relieve the housing shortage, more and more families are seeking to get outside — far enough away from crowded conditions to permit keeping a garden, chickens, and perhaps bees. Regardless of whether the beginner lives in the city proper or in a suburb, the demand for gentle bees is growing. One Ohio city has more than 200 beekeepers within the city limits and 600 in the county. Complaints are surprisingly few and far between, but at the same time there is reason to recommend gentle bees—bees that can be handled frequently without smoke at all—bees that do not start out on a rampage just because someone happens to stand for a moment or two in the line of flight.

There are other advantages of Caucasians in addition to their well-known gentleness. Like most of the darker races, they cap their honey whiter than do Italians. This is because the cappings stand up a little above the surface of the honey rather than close to it as usually found in cells capped by Italians. The air back of the cappings makes them look whiter.

We are entering a period when unemployment is again increasing. Since this is always worse in our large centers of population, it stands to reason that thousands with not too great experience with bees are going to start keeping them, and, other things being equal, these beginners are less likely to get into trouble if the bees are gentle.

Island Queen Rearing by A. I. Root

In this connection it is interesting to recall that A. I. Root was a great friend of Caucasian bees. Forty-four years ago E. R. Root, hoping to persuade his father and mother to spend their winters in Florida, suggested that A. I. Root go south and rear Caucasian queens. With characteristic shrewdness, A. I. Root felt that he would be more likely to get his young queens purely mated if he could be on an island. Therefore, during the winter of 1905 and 1906 he actually started rearing Caucasian queens on an island off the west coast of Florida, near Osprey. He had great difficulty in securing enough Caucasian drones. Before he could renew his attempts another winter, Mrs. Root, nearing 70, felt that she could not stand the primitive life necessary on an island, so they returned not to the island but to Bradenton.

A. I. Root's summary of his Caucasian bees in the May number of Gleanings for the year 1906 is interesting reading today. We quote a part of his article. It is especially interesting since it happens to be about the last he wrote on bees. It shows the sparkle and vivacity that marked the writing of his younger days:

...I have satisfied myself by careful watching that every time bees gorge themselves with honey when you give them a severe smoking there is a loss. Besides that, a colony that will do this when you go to extract wastes time, because it is often an hour or two before it gets down to business again. With Caucasians or gentle Italians there is no such waste. The Caucasians are ahead of any other bees in this respect.

When honey began to come in February and March, as soon as I opened the hive the bees would dart right off from the exposed combs, making that peculiar "Zip, zip, zip", as working bees always do when

The late L. H. Benninghof of Columbus, Ohio, showing that his Caucasians had their supers full of honey.

they start off for the fields in the morning. Not only this, but when I had the combs all out of the hives, and visitors were holding them several rods away, these bees would start off the combs and go in quest of honey. Italians may do this under favorable circumstances, but I cannot remember ever having seen them do it. The Caucasian queen goes right along laying eggs, without paying any attention to what is being done. Of course, I handled the combs very carefully. They were such quiet lovable little pets that it hurt my conscience to pinch or crush one of them; and a good many times last winter I thought I should be very glad to have again my old metal-cornered frames for handling the Caucasians. I have never gotten hold of any other frame where I could set the combs into the hive quickly and not pinch a bee. I decided in a very few weeks after getting to Florida that if Caucasians were even equal as honey gatherers, I should regard them as a valuable acquisition.....

Before I had worked with the bees a month they were getting more honey according to the number of bees in the hive than any of the rest of our colonies. There were five colonies already on the island, one or two of them almost pure blacks. A couple of hives of vicious hybrids and one with very nicely marked Italians were in the lot. When the saw-palmetto came out the Caucasians were bulging their combs with honey just above the brood nest, and this was the case when some pretty strong nuclei of apparently almost equal strength had to be fed to keep them from starving. In April they had so much honey if an extractor had been handy I would have thrown some of it out to give the queen room..... We did not get any laying queens until I could get this old queen to laying eggs in drone comb. While the hive was always away ahead of all the others in the way of gathering honey, we were constantly taking away brood for my experiments in trying to get queens with my 22 nuclei. When honey began to come in pretty lively, she began to show greater ability in filling combs with eggs, until she finally outstripped all our other queens in this respect.

About this time I began to find queen cells in the Caucasian hive, and when she began to lay eggs in them I removed enough brood to break up the swarming notion.

Now this is all I know about their disposition to swarm. With the experience I have had I cannot say whether they are greatly addicted to swarming or not; but if this is true, I think that by judicious crossing it could be corrected. Neither can I say that Caucasian bees as a rule are extra good honey gatherers. I can only say this: I would rather have that queen to start an apiary than any other queen I ever saw before or had anything to do with.

On my way home from Florida I talked with Dr. Phillips and his assistant, Leslie Martin, about the Caucasians. They very nearly if not entirely agreed with me in all the points I have mentioned. Mr. Martin opened a hive of them in the house apiary on their grounds in Washington and, in order to see whether these Caucasians were like my own on the island, I carried a frame to the open door. While standing there the working bees took wing from the comb with that well-known "zip, zip", and went out at the open door. Of course, they did not take their bearings, so that when they they returned with a load of honey or pollen they would go to the usual entrance instead of coming back where they took wing. Experiments at Washington indicate that young queens that meet drones of other races produce bees that are remarkably gentle.....

Perhaps it would not be practicable to expect to get an apiary of 40 or 50 colonies that would never need a smoker at all, but I am pretty sanguine in regard to the matter.

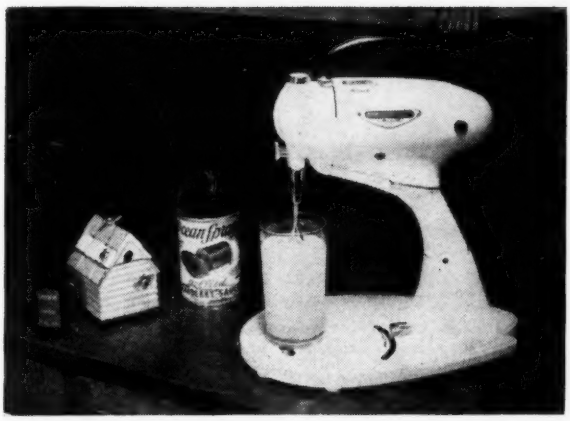
Then again, aside from the time saved to the owner of the bees, I am sure a race of bees that goes right on gathering honey when the hive is opened will accomplish more than those "idiots" that stand on their heads, stick up their stings, and buzz around your face every time you try to handle them.

Caucasians will rob like other bees but I do not think they are disposed to learn to rob. In one case when I took some frames covered with bees to start a nucleus they found their way home and learned the trick of all joining in to carry the honey back to their old hive where it came from. They worked at this early and late with a wonderful alacrity just like any other bees that are robbing. But while robbing they manifested no disposition to buzz about your ears and threaten to sting.

Interest in Caucasians is surely growing. Whereas there were formerly only one or two shippers who supplied them, today there are a half-dozen or more. Times are changing. Perhaps Caucasians have not been receiving the attention during the half century that their many good qualities warrant.

Hot Weather Cookies

By Mrs. Benj. Nielsen



Cranberry honey milk drink is made in a twinkling.

Almost too hot to eat, isn't it? Folks, especially the young fry, crave cold bottled drinks. Wishing to avoid excess, nutrition-minded mothers, alert to the nutritional needs of rapidly growing youth, realize that milk must be used in the diet. Children need it for health and normal growth; adults need it for continued health and well being. So, for mothers who find it difficult to get the children to drink milk, I have been experimenting with honey milk frosties, and pass them along with other hot weather coolies. Try 'em on Dad, too! Indeed, let the whole family get necessary quick energy the healthful honey way!

If the children are at the experimental age, let them make milk shakes for the gang, or just for mid-morning or mid-afternoon snacks. Let them whiz up individual drinks with the electric mixer. They will love to show their "soda jerk" prowess, and who knows — maybe the gang will get other mothers started on honey-way drinks!

Before passing on to recipe details, let me remind you to pour your freshly-made hot tea over honey and serve ice cold. How much honey you use depends upon personal taste and the flavor of the honey. May you enjoy its delightful aroma and inimitable flavor. Don't forget to take plenty of honey sweetened lemonade to the picnic, and have it on hand in the refrigerator when friends drop in.

Honey Milk Shakes

Combine and shake in a covered jar or shaker 1 cup cold milk, 1 to 3 teaspoons honey, 1 tablespoon fruit juice or fruit syrup, and a dash of salt. You may flavor with grape, loganberry, pineapple, cherry, raspberry, orange, or blackberry.

Honey Chocolate

Two and one-half squares unsweetened chocolate, grated, ⅓ cup water, ½ cup honey, ½ teaspoon salt, ½ cup cream, whipped.

Combine chocolate and water and place over low heat. Cook until smooth and blended, stirring constantly. Stir in honey and salt, blending thoroughly. Cool, then fold in whipped cream. Store in refrigerator. Use as sauce for ice cream, or use 1 tablespoon in preparing drink, either hot or cold.

Cranberry Honey Milk

One-fourth cup cranberry juice, 1 to 2 teaspoons honey, ⅔ cup cold milk, and almond or lemon flavoring if desired.

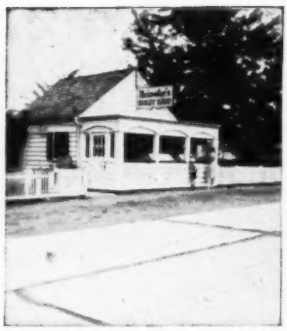
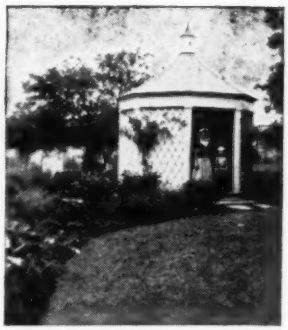
Combine all ingredients and beat until frothy. Serves one.

Honey Butterscotch Sauce

One and one-half cups brown sugar, ½ cup honey, ¼ cup butter, 4 drops vinegar, and ⅓ cup cream or top milk.

Combine brown sugar, honey, and butter. Cook until a soft ball will form in cold water. Remove from heat. Add vinegar, stirring until completely mixed. Add cream slowly, stirring constantly. Serve hot or cold.

Aurora, Nebraska.

The approach sign should be large enough to be read quickly. The stand should be attractive, as is Mr. Meineke's in Arlington Heights, Illinois.

Sales Tales

By Tom Paisley

One of the major problems confronting the beekeeping industry is the selling of honey. Beekeepers both large and small are faced with a marketing problem in this period of lower honey prices. How can you best sell your honey?

In an effort to help each other with this most difficult problem, we are starting this column which will consider various ideas in advertising, promotion, and selling. It is hoped that beekeepers will send in their successful ideas so that we may all profit and find new methods of pushing honey.

This column will endeavor to pass along ideas which not only have been proved, but ideas which you can use. We are all interested in getting the best possible price for the honey we produce. Perhaps with a little thought in the selling end of the business, you can arrive at some new and better marketing methods.

The Roadside Stand

At this time of year with all of the cars on the road, a great deal of honey is sold at roadside stands. There are several complaints that we hear frequently about the roadside stand. By reviewing some of these easily correctable errors, you may greatly increase your own sales volume.

The Approach Sign

How many times have you, in driving through the country looking for a particular product, driven past stand after stand that had what you wanted because you did not see it until it was too late to stop. This is a common fault of most stands. A colorful sign stating "Honey Ahead", "Bargains Ahead", "500 Feet to John's Market", or any other type of warning sign will bring customers into your yard instead of having them wave as they go by. The cost of the approach sign will be slight indeed in comparison to the number of customers who will stop at your stand.

The Stand

We mention a colorful sign. The importance of color cannot be overlooked in setting up and operating a successful roadside stand. A freshly painted, neat stand will attract your customers. No amount of tricky displays will beat the impression of fresh cleanliness. Look at your own roadside stand. Perhaps your best bet to insure sales would be a couple of gallons of white paint. A freshly-painted stand with weeds and high grass cut down around it is a perfect background on which to build your display.

The Display

A wonderful way to attract roadside buyers is by having a cleverly arranged colorful display. People will stop to see an observation hive and will bring their friends to see it. They will go away loaded down with honey but they will remember the enjoyable and interesting experience they had seeing the

bees. Those of you who can have a small bee yard visible from the stand will find that people are very interested in where the honey comes from and will watch the bees and talk about them for long periods of time. This is the best kind of advertising available, for if the people like your honey as well as the interesting place from which it comes, they will return to your stand many, many times each year.

It is also wise to remember that people are much more attracted to a large display than to a small one. If you make a pyramid display of three or four cases of honey, it will draw much more attention than just having several bottles sitting out where customers can see them. This sales theory has been proved many times in your corner grocery store. You never go into a grocery store and see a display of three or four cans of any one item. You cannot put out a few jars of honey and expect to stop traffic either.

Stand Selling

This is one very clever sales stunt in connection with stand selling which we have seen work: The beekeeper's wife had baked a pan of homemade biscuits. Each of the customers who stopped was invited to have some honey on a biscuit just as they would have it at home. Once they had tasted the mouth-watering goodness of the honey and biscuits, their sales resistance was greatly lowered. By letting the customer taste the same product that he was going to take home, you could greatly increase his desire for the product.

The last feature of stand selling which cannot be overlooked is the smile. A good warm smile will often sell more honey than any price quotations or sales talks. That smile is indispensable in sending the customer away with the honey and also happy. Make the customer glad that he stopped to buy.

The suggestions offered for the improvement of your roadside selling technique will naturally not apply to all beekeepers. However, the same basic problem exists whether you sell at a stand or not. First you must attract and "slow down" your customers. You have to get them thinking honey before they will buy honey. That is true whether it is sold in stands, over the counter in stores, or out of your own back door. A beekeeper whom I visited last month complained bitterly of the fact that he did not sell all of his crop. His honey was sold from his own home, but there was no sign on the house and you could not see his bee hives. You would have had to be a mind reader to know that honey was available there. No one who does such a slipshod job of selling as this has any right to complain about how difficult it is to sell honey.

Together all of us have to consider selling. We must put our sound sales ideas together and push honey. Honey is the best food product in the world. We have the quality product and all we have to do is to sell it.

This column can be of great value to all of us if you send along your workable advertising, promotion, and sales ideas. We here are on the lookout for ideas which may help you. By exchanging a worthwhile selling play, we can all profit.

Lazy Bees

The February issue of the Alcoa Aluminum News Letter contained the following comment:

"If you read these pages as carefully as we hope you do, you may recall a story several months ago about beehives with aluminum roofs. It was pointed out, you'll remember, that bees insist on cool working quarters and provide their own air conditioning system by using wing-power to keep fresh air circulating through their hives.

"Thanks to aluminum's high reflectivity for radiant heat, however, the aluminum-covered hives are anywhere from 10 to 15 degrees cooler in hot weather. This means that bees can devote more energy and time to the making of honey—a pleasant occupation, and, after all, the prime objective in the life of a bee. . . . . .

"Naturally, if aluminum can lighten the burden of bees, just as it lightened the burden of man, we're happy. Nevertheless, someone must call a halt sometime, or we fear that all bees will get downright lazy. If every bee becomes a drone, where will we get our honey? And what will the flowers do? And how will we explain things to our children?"

A Talk to Beekeepers

By M. J. Deyell

Joys and Sorrows of Beekeeping

If I could have a chat with beekeepers who read these talks I would probably find some of them feeling optimistic and others perhaps somewhat pessimistic. Beekeeping is not much different from some other lines of business in that people have their ups and downs. In fact, life consists largely of ups and downs and may be said to be a series of antitheses — laughter, sorrow, success, failure, sunshine, clouds, war, peace, warm, cold, and I could go on and on.

Last winter at the Illinois State Beekeepers' short course I was asked to give a talk on the joys and sorrows of beekeeping and that is why the topic comes to my mind at present.

I well remember during early June of 1917 while keeping bees commercially in the raspberry region of northern Michigan, experiencing a rather heavy frost in June that destroyed some of the raspberry buds that were about to break into bloom. Our potatoes and garden were frozen. Things looked mighty bad. And to top it off, walking through the apiary one morning I found a hive with a few starving bees on the alighting board, with some pupae which had been carried out of the hive.

An immediate investigation of the condition of other colonies showed some hives with practically no stores. I had just bought the bees but had no bee feeders. I rushed to town for a few bags of granulated sugar, made some sugar syrup, and fed the entire apiary of over 200 colonies by placing the sugar syrup in a long hog trough. This did the trick. It was comparable to a honey flow. I do not recommend the practice except as an emergency measure.

In a few days the raspberry flow began. The frost did not kill as many blossoms as we had thought it might. We were soon putting on supers, the bees were roaring and we were working nights, putting in full sheets of foundation to keep ahead of the bees. Many times since then I have experienced ups and downs in beekeeping. Some

M. J. Deyell

days things look very dark and then the next day something happens to change the outlook and we wonder how we could ever have been so pessimistic.

Prospects Could Be Better Around Medina

In a former talk I mentioned the scale hive gaining 25 pounds in eight days from May 1 to 9. After May 9 the hive began to lose weight —in fact, by the end of May it had lost nine pounds. As a matter of fact, the hive has gained only about five pounds since May 31 and this is June 13.

Clovers are in bloom and fairly abundant but the weather has been very dry. As I dictate this talk a gentle rain is falling, so perhaps conditions may change for the better and my spirits rise.

Conditions in western Ohio have been somewhat better. On June 10 we examined some colonies which had been supered for section comb honey on June 2 and the bees had drawn out the sections and were beginning to store honey. We are again trying out a method of comb honey production mentioned in the May talk. It is working out well thus far.

I might say that we are also trying a few colonies for comb honey, supering on top of double brood chambers. If this would work, a great deal of extra manipulation could be avoided. At any rate we intend to follow through on some double brood chamber populous col-

onies for section comb honey production to see what happens. Back in 1938 when we had an exceptionally favorable season for comb honey production we tried this method with a few colonies and it worked well. In fact, I can recall one such colony that put up 224 filled sections. 1938 was one of the best seasons we ever had in northern Ohio. A beekeeper who is not an expert comb honey producer could have secured a crop that year provided he kept ahead of the bees and put the supers on in time.

An Observation on Nectar Gathering

On June 4, a very hot sultry day, I decided to plant some garden. The weather was too warm to stick at the job continuously so I sat down at the end of a row in the shade to cool off. There happened to be a number of alsike clover heads in full bloom near where I sat. A honey bee visited four of the blossoms, remaining a few seconds on each one, then flew away to a nearby cluster of blossoms. Just then another honey bee visited the first blossom that the preceding bee had visited. The last bee left this blossom immediately but did not visit the remaining three blossoms. Apparently the second bee knew that the first blossom had been visited and decided to search for other blossoms.

Just how honey bees allocate bee pastures in order to avoid duplication and at the same time do a thorough job of collecting all the nectar and pollen available, with the minimum of labor and time, has been somewhat of a mystery.

From some recent work done by Sardar Singh, a student from India who visited this country in 1937 and again during 1947 and 1948, it seems that a honey bee does not travel as far from the hive to collect nectar as has been supposed. Furthermore, according to his recent findings, in connection with obtaining his Ph.D. degree at Cornell University, each bee works a comparatively small area and restricts its gathering to that area. To obtain this information required many hours of painstaking observation and quick movements in following the flight of certain bees that were marked so as to be easily identified. A detailed report on Dr. Singh's work will appear later.

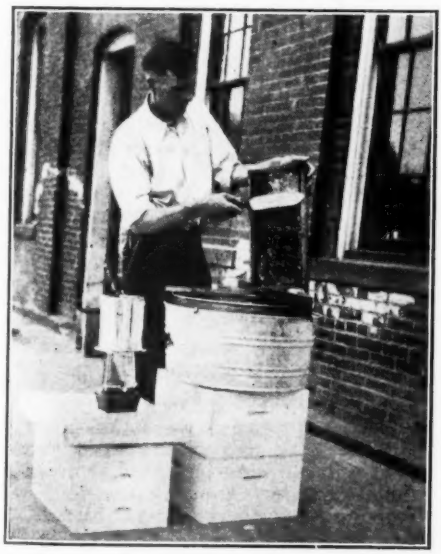
Ventilation

Some beekeepers practice giving colonies ventilation in hot weather, while others do not provide ventilation in hot weather other than a wide open summer entrance. It is possible to provide extra ventilation by pushing a super back about $\frac{3}{8}$ inch. The block covering the hole in the inner cover may also be removed and this will give an opportunity for upward ventilation.

Don't Take Honey Off Too Soon

Most beekeepers are anxious to taste the new crop of honey. There is a tendency to remove combs or supers before the honey is properly ripened. Honey taken off too soon is likely to ferment because of the high moisture content. Extracting combs should not be removed until they are at least three-quarters capped over, and even then the honey may not be thoroughly ripened during rainy weather. Comb honey should not be taken off until sections are entirely capped over.

A bee escape may be used to remove supers of honey from hives. This is a small device which fits into the opening in the center of the inner cover after the center block is removed. The bees enter a small hole



This backlot beekeeper may heat water in a 10-pound pail placed over a hot plate or oil stove. The uncapping knife is dipped into hot water before being used.

in the middle of the bee escape, then travel down between two pliable springs. They are unable to return through the small springs which close as they pass through. If a bee escape is put under one or more supers in the afternoon, bees are likely to be out of the supers the following afternoon. The supers can then be carried into the honey house. This method of removing surplus honey avoids stirring up the bees.

Equipment for Extracting Honey

A small two- or three-frame honey extractor is large enough for the beekeeper with from one to 20 colonies. A small motor attachment saves much labor of turning the crank by hand.

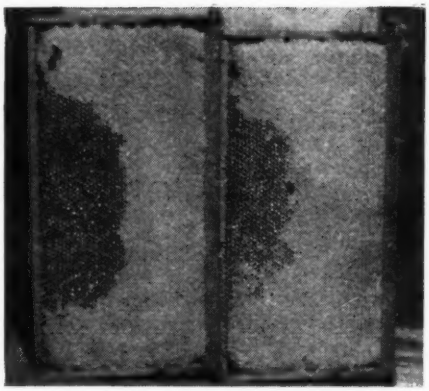
The room in which the extracting is to be done should have windows screened to keep out bees. The extractor should be anchored down securely to the floor to prevent its rocking while in motion.

Combs of the approximate same weight should be selected so that the machine may not be thrown out of balance. After combs are uncapped with a hot knife they are placed in the baskets of the extractor. A part of the honey should be thrown out of one side of the combs, which requires only a few revolutions, then the combs are reversed and all of the honey is thrown out of the opposite side. The combs should then be reversed again and all of the honey thrown out of the first side. This procedure avoids placing too much strain on the midrib of the comb and results in a minimum of comb breakage.

How to Strain the Honey

The commercial beekeeper with a large extractor will use a honey pump for pumping the honey from the extractor into the tank. The small beekeeper with a hand machine may run the honey from the extractor into a pail, then empty the honey into a small honey tank covered with two thicknesses of fine cheesecloth for straining the honey. This cheesecloth may be fastened over the top of the tank by means of a wire tightened with pliers, or a support for holding the strainer cloth may be used.

During hot weather, honey direct from the extractor will strain through two thicknesses of cheesecloth quite readily. If the weather is cool it may be necessary to heat



Two combs filled and almost capped over, suitable for extracting.

the honey before straining. To do this the honey should be run into 60-pound cans from the extractor, then heated in a wash boiler with water surrounding the cans which should rest on two small wooden sticks so the water may circulate under the bottoms of the cans. The honey should not be too hot. Overheating tends to destroy the delicate flavor of the honey.

From Hive to Table in Three Hours

It is well to extract honey from the combs as soon as possible after they are removed from the hive. Honey that is warm, right off the hive, is extracted easily and can be strained quickly.

Some years ago I brought in two full supers of combs, after brushing the bees off, and extracted the honey within an hour after it was taken from the bees. We had some of the honey for supper that evening and our family pronounced it the best honey they had ever tasted. It was pure white clover. Incidentally, it is difficult to get white Dutch clover honey so pure and unmixed with other honeys as we did that season.

To Sell We Must Tell

This is a phrase we have used a number of times recently but nevertheless it remains true. If you have some perfectly good honey to sell, you must let people know about it. How are you going to do this?

Well, you can go up and down the streets of your town calling at the various houses, taking orders, and delivering later. An effective way

to sell honey is to put a small classified ad in your local newspaper, then erect a honey sign in front of your home. If the price is right and customers receive good quality honey and service, a profitable business can be built up.

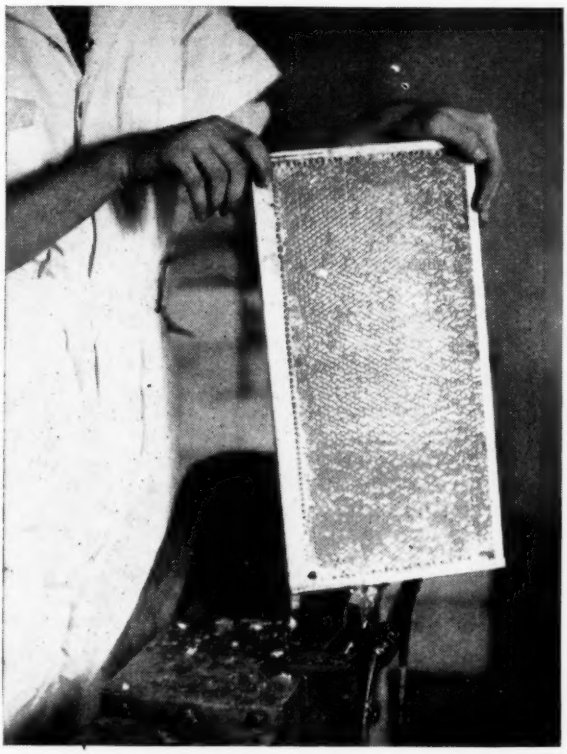
Beginners as Well as Experienced Beekeepers Must be Careful to Avoid Having Bees Start to Rob After the Main Honey Flow is Over

If the honey flow shuts of suddenly, bees that have been accustomed to carrying in nectar will naturally be on the lookout for sources of nectar, and if it is not available, bees will steal honey from sources open to them. For example, if the honey house door is not closed tightly or if a window is open slightly, the bees are sure to find their way inside, and if they once get started to robbing it is difficult to get them out of the habit of trying to get into the building.

After the main flow is over it is inadvisable to open hives in order to manipulate colonies unless absolutely necessary. If a comb is left standing at the corner of a hive longer than necessary, robber bees will find the honey in this comb and in a short time an apiary may become stirred up. Keep combs of honey under cover.

It is sometimes difficult for beginner beekeepers to detect signs of robbing. An experienced beekeeper is likely to note early signs of robbing such as bees circling around and lighting on a comb removed from the hive.

If one or more strong colonies pounce on a colony of sub-normal strength, this weaker colony will sometimes be cleaned up, which means that all of the honey will be robbed out of the hive and many of the bees killed. The entrance to this hive should be reduced down to about a quarter of an inch when first signs of robbing are detected.



This comb has just been uncapped by a power uncapping machine which removes the cappings quickly and evenly. This perfect comb may be used over and over again for many years, after the honey has been thrown out.

Second Glances

By C. M. Isaacson

Cotton evidently yields heavily if colonies are in shape to make use of the flow (page 345). With nectar coming in from daylight to dark over a flow period of six weeks, it is easy to see that a good crop can be stored by strong colonies. Strong colonies at the right time—that is the beekeeper's objective, no matter what the locality or type of nectar-yielding plant.

Honey treatment of external sores is not too rare a practice, so it is of interest to read in the item on page 346 that it is likewise of value for ulcers. Its healing powers evidently are considerable.

Expect a high cost of living for some time, says Prof. Patton—and a high production expense in our beekeeping industry. If he is likewise right that the honey market has lost several favorable factors it once possessed, then beekeepers may ask for, and accept, government help. The proven value—should I say "great value"—of bees for pollination does justify some sort of incentive payment—if it becomes essential (page 347).

The Seed Trade Association's resolution (page 349) also recognizes this fact—that bees are essential to our present agricultural economy, and urges a program to assure beekeepers proper return for such services. It is worth thinking about.

Honey plants come and go. Even in Ontario, which many of us mistakenly think of as "virgin territory", clover is declining rapidly in acreage. Migratory beekeeping to areas where it is still abundant is the natural way out, and it is of interest to note that colonies are moved with entrances open most profitably and safely. This has been the practice here, especially for short moves, for some time, and some long-distance trucking from Texas is being done in **screened trucks** but with entrances open (page 350).

California migratory beekeepers seem to be going a step farther, and are moving colonies without even stapling together the hive units. You must have smooth roads, Mr. Tontz, or else are quite an expert at loading and tying. I am afraid we would have quite a mess after traveling over some of our outyard trails. But new methods do catch on slowly—and for every experiment we should be grateful. Experimenters are the pioneers (page 352).

Grade comb honey HONESTLY, says Mr. Rehman in his concluding article of a fine series, and it is excellent advice. Grade so that you have nothing to hide—then display. The same could be said in preparing extracted honey for market. Honey is one of Nature's finest products—let's show it as such! And to the double caution as to Cyanogas—a third. We use it so freely we are apt to become careless, and one time may be all (page 356).

Well earned honey was that secured at real peril by the three men who raided the colony of the giant Indian bee (page 358). That sting-proof suit would be welcome at times while working with some hybrids I have experienced — and friends will join me in that! I have seen some that smoke only infuriated.

Real line breeding of honey bees is possible with the methods and apparatus developed for artificial insemination of queen bees. One factor holding back the work, however, would seem to be the high degree of technical skill required, even with the improved equipment. This of necessity will make for a more limited number engaged in the work (page 360).

Producing comb honey over two-story colonies would fit in well with the average commercial beekeeper's methods. It may be the solution to the need for more of this finest of products. And how about the deep frame section holder we saw considerably several years back? It too seemed to have good possibilities (page 364).

A honey price support program is reasonably certain of adoption, says the editorial on page 372. Whether good or bad news, only the future will tell. We need help—but—. It is certain that we must continue our efforts to help ourselves. Our American Honey Institute is one of the most valuable of such aids. Don't forget it.

American Honey Institute News Notes

By Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

To know all you possibly can about your industry is one sure way of keeping ahead of the market. The Honey industry is complex with many facets to its production and marketing. Successful beekeepers must know all the angles and use them to advantage.

Not the least of the factors working for a successful Honey market are the Honey recipe booklets published by the American Honey Institute. So that every beekeeper may be up-to-date on the variety of leaflets available to him at cost this year we include the following list of literature:

Old Favorite Honey Recipes—Ten cents a copy, $10.00 per 100. An "old favorite" indeed, this recipe book has reached the half million mark on the publisher's books! It's earned its own excellent reputation through the top, tested recipes it contains. However, now with printing costs and postage rates going up, the quantity price of $10.00 per 100 will have to be changed at the next printing. Order now to get the benefits of the lower prices.

New Favorite Honey Recipes—Twenty five cents a copy, $5.00 per 25. The pink, lavender, and green cover on this plastic-bound 56-page booklet will attract any customer. Re-sell them or give them away to your best customers.

Honey—$3.00 per 100. A nutritional booklet on Honey, this is a must for every beekeeper's bookshelf! Comes in handy when the customers start asking technical questions about the composition of Honey.

Honey for Breakfast—$1.00 per 100. This pink and blue leaflet is an eye-catcher. Placed on a display stand with your Honey containers, it is sure to convince customers that Honey should be eaten every morning!

Honey to Start the Day Right—$1.00 per 100. Another leaflet aimed at the customer as she sets the breakfast table. "Start the day right—put Honey on the table!" is the hint it gives.

Two New Favorite Cake Recipes—75 cents per 100. For the housewife who likes new cake recipes (and what housewife doesn't?) this black and white leaflet is just the ticket. Complete with pictures of the two cakes, Cherry Nut Loaf Cake and Quick Honey Spice Cake, this leaflet is an excellent Honey advertiser.

Two Sweet Gifts, Citrus Fruits and Honey—$1.00 per 100. Designed with a striking yellow-on-green cover, this leaflet is one of the most popular. It contains 14 tested recipes that are sure to persuade your customers to use more Honey!

A Honey of a Chocolate Cake—60 cents per 100. Many's the cooking contest that has been won with this delicious cake that is so easy to make! Make up a sample cake, give a bite to your customer, give her the recipe, and then sell her the Honey!

Honey and Cereals — $1.00 per 100. This brown and yellow leaflet is designed to show your customers how good Honey is when poured over cereals in the morning. Besides the recipes it contains several tips on preparing a good breakfast in the minimum of time.

Honey Iced Tea Cards—25 cents per 100. Summertime is iced tea time. Show your customers how to make it with Honey with these inexpensive recipe cards.

Every Meal a Guest Meal With Honey Recipes—$1.00 per 100. Just the right size to fit on top of a five-pound pail, these dainty recipe leaflets are convenient and effective.

Use Honey for Canning and Preserving—60 cents per 100. Canning season is just around the corner. Supply your customers with these leaflets to make sure they can their foodstuffs with Honey!

It's a Honey—60 cents per 100. Baked ham with Honey tops almost everybody's list of good things to eat. Your customers will try it if you provide the recipe with new ideas for serving ham.

Honey The Clock Around — 80 cents per 100. Honey for all hours of the day—that's what this leaflet suggests. With a blue and white cover it is sure to catch your customer's eye.

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Editorials

Crop Prospects As we go to press, reports from various parts of the country on crop prospects for the North are not overly encouraging. Lack of moisture in some of the best clover honey areas will likely reduce the crop materially. However, rains have come to some sections of the North which have doubtless improved prospects. Time will tell.

* * * * *

Canadian Government to Purchase 5,000,000 Pounds of Pasteurized Honey The 1948 crop of honey in Canada amounted to around 44 million pounds, the largest crop ever produced in that country.

According to the Department of Trade and Commerce, Dominion Bureau of Statistics, as of April 1, 1949, the total stock of honey on hand was close to 10 million pounds.

The June 1949 issue of the Western Canada Beekeeper, published in Winnipeg, Manitoba, announces that the Canadian Agricultural Prices Support Board will accept offerings of pasteurized honey up to five million pounds for delivery prior to July 31, 1949. The minimum quantity of a single purchase is 30,000 pounds in 60- or 70-pound containers packaged for export, the price to be 14 cents for white, 13 cents for golden, 12 cents for amber, and 10½ cents for dark. All prices are basis delivery Montreal, export tariff rate. The purchase price at any specific point may be ascertained from the Board.

Offerings should be made to the Secretary, Agricultural Prices Support Board, Confederation Building, Ottawa.

This move is designed to relieve the market of surplus honey and to assist producers in disposing of stocks on hand.

* * * * *

Swarms Some beekeepers base their success in beekeeping on the number of swarms that issue from their hives during a season. In modern beekeeping the trend has been toward control or reduction of swarming, because a divided colony stores less surplus honey than an undivided colony.

There are some beekeepers, however, who claim they secure as much—or possibly more—surplus honey by permitting their colonies to swarm and manipulating the hives in an intelligent manner.

During the present season we have received many reports of excessive swarming in various sections of the country. This may be a blessing in disguise, because there is a shortage of bees over the country for pollination purposes, and when swarms issue, they leave for the woods and eventually become established in bee trees where they serve a useful purpose.

It would be interesting to know how many swarms occupy trees, crevices in rocks, or sidings of buildings throughout the country. If it were not for the so-called wild bees, our pollination problems would be more serious than at present.

Those who have not read the interesting chapter in the late Maurice Maeterlinck's book entitled "The Swarm" have missed some intriguing bee literature. After reading this chapter, even those who say they do not favor having swarms issue might be tempted to tolerate a few swarms in order to corroborate the observations brought out by the author. Apparently Maeterlinck, a great naturalist, devoted much time to the study of the honey bee.

A swarm of bees in the air, hanging in a cluster on the branch of a tree, or entering a hive or the siding of a building is one of the most interesting phenomena of all nature.

* * * * *

The Legume Seed Research Laboratory This laboratory mentioned in an article on page 423, should mark a new epoch in our industry. We need to know more about the propagation of legumes, not only for the enrichment of our soil but also for bee pasturage. Obviously, beekeeping in the clover regions of our country would be unprofitable if it were not for the various kinds of clovers from which some of the best honey in our country is gathered.

Furthermore, there is a shortage of clover seed at the present time,

owing mainly to the fact that during the late war many farmers produced grains—oats, wheat, corn—and soy beans, cutting down on the acreage devoted to clovers.

About 15 years ago here in Ohio, especially in the western part of the state, sweet clover was quite abundant, both yellow and white. At that time the white sweet clover seemed to predominate. It was not uncommon for beekeepers in sweet clover areas to harvest unusually large crops of honey — 150 or 200 pounds averages. Since the disappearance of sweet clover, commercial beekeepers have had difficulty in making a living margin of profit.

We hope, therefore, for the good of agriculture as well as beekeeping, that the growing of legumes may again become common in crop rotation on farms. If and when it does, the fertility of the soil will be restored and beekeepers will secure larger crops of honey than at present.

The legume seed research project now under way is very much needed and those who engage in this work have our best wishes and moral support.

* * * * *

Our Industry — Whither Bound? Someone has well said that the origin of the art of beekeeping is hidden in the mists of antiquity. At least, beekeeping is as old as any branch of agriculture because bees have existed from time immemorial.

A review of available beekeeping literature appears to point out at least five beekeeping eras. The first was the box-hive era which existed prior to 1852 when Langstroth invented the movable-frame hive. Before that time knowledge concerning the internal workings of a hive of bees was practically a closed book, although some work had been done, notably by Huber, the blind naturalist who invented the leaf hive which enabled those interested in bees to see the eggs, larvae, and inmates of the hive.

The second beekeeping era occurred from 1852 to 1867 and it was called the box-honey era.

The third era, usually called the first extracted-honey era, occurred from 1867 to 1876 and was ushered in by the invention of the honey extractor by an Austrian named Hruschka.

The fourth era, called the first comb-honey era, from 1876 to 1906, gained impetus from the invention of comb foundation. It was then possible to put worker comb foundation into frames and thus insure the maximum production of worker bees rather than so many drones.

The late A. I. Root put out his first foundation mill in 1876.

The fifth era, usually called the second extracted-honey era, began in 1906 with the enactment of the Pure Food Law which made it illegal to adulterate honey. We are still in this era. Prior to 1906 a considerable amount of adulterated honey was found on the market and the public lost faith in honey.

The late Dr. C. C. Miller, one of the best comb honey producers in the country, then almost 80 years of age but young in spirit, changed from the production of comb honey to extracted honey. Dr. Miller never did get into a rut.

Well, whither are we bound? Nobody seems to know and we hesitate to hazard a guess. Are we headed back to another comb-honey era? If clovers again become plentiful and bee pasturage improves generally, this seems possible. We do need more comb honey than is being produced at present.

In any event, our industry, one of the most important branches of agriculture, must go on and those of us connected with beekeeping should do everything possible to help our industry in the future.

* * * * *

Vicious Bees Should Not Be Tolerated Most beekeepers detest cross bees that look for trouble, fly against one's bee veil continuously, and sting one's hands, if unprotected, on the slightest provocation.

We met a beekeeper in northern Michigan some 30 years ago who had some vicious hybrids that were good honey gatherers but mean as sin. When we mentioned the temper of his bees he said he didn't care how cross they were so long as they brought in the "juice".

A few beekeepers, through carelessness and mishandling, are responsible for bees becoming cross at times. All beekeepers, especially

those having bees near dwelling houses in towns or in thickly-settled rural areas, should surely avoid opening hives on cool days or during a dearth of nectar.

Beginners can tell whether bees are gathering nectar by examining the entrance of a hive. When bees return from the fields and drop down onto the alighting board heavily laden, then walk into the hive entrance, they are gathering nectar. When returning bees hover up and down in front of the hive entrance, then fly into the hive, they have light loads of nectar, if any, or perhaps some water.

Colonies of bees that will not respond to proper handling but insist on stinging and making life miserable for owners, should be either Cyanogassed or requeened with queens from a strain known to be gentle. Life is too short to have to tolerate vicious bees.

Queen breeders can and should turn out stock that is reasonably gentle to handle and superior in honey gathering. This combination of qualities in a strain of bees may not be easily attained in bee breeding. Some are of the opinion that gentle bees are indolent. This is not necessarily the case. It is possible to combine **industry** with **gentleness,** and for the good of our industry more attention will have to be given to these characteristics in future bee breeding. Our country needs more bees. Vicious bees will not popularize our industry. Bees that are reasonably gentle to handle make beekeeping a pleasure.

* * * * *

Pollination and Bee Pasturage Conference in Seattle The fifth annual meeting of the Honey and Pollen Plants Committee of the American Beekeeping Federation is to be held in Seattle, Washington from July 12 to 14. (See page 454.)

Since pollination and bee pasturage are of paramount importance to our industry it is hoped that a goodly number of beekeepers and those affiliated with our industry will attend.

An interesting and informative program is in the making. Outstanding speakers from the departments of horticulture, agronomy, soil conservation, state highway commission, and the experiment stations of U.S.A. and Canada will appear on the program.

The state of Washington has some unsurpassed points of scenic beauty well worth visiting. This meeting furnishes an opportunity to combine pleasure and business.

* * * * *

Bees and Honey in Canada According to the honey crop report dated February 1, 1949, put out by the Dominion Bureau of Statistics, Agricultural Division, Ottawa, Canada, the crop produced throughout the Dominion in 1948 was 45,000,145 pounds, a gain of approximately 8,000,000 pounds over 1947 and 22,000,000 pounds over 1946.

The number of colonies of bees in Canada during 1948 was 569,800, which is about 19,000 colonies less than in 1947.

The average per-colony production in 1948 was 79 pounds against 63 pounds in 1947. The average production per colony for ten years throughout the Dominion prior to and including 1948 was slightly over 72 pounds.

* * * * *

That Spring Honey Flow Reports received from different parts of the North indicate an unusual honey flow during fruit and dandelion bloom in early May. A beekeeper in Michigan secured over 40 pounds per hive in four days. An eight-pound gain per colony for a few days was reported from New York. Here in Medina our scale hive gained six pounds in one day and 25 pounds in eight days.

Quite often the weather during fruit bloom is cool and unsuitable for nectar secretion. This past season conditions for a spring flow were ideal.

This extra amount of honey and pollen collected during early May gave colonies a tremendous boost. Hives containing normal-sized colonies during the spring flow were running over with bees and had a goodly amount of stores during late May. In some instances surplus honey could have been removed.

It is hoped that a good major honey flow may materialize so that these populous hives of bees may have occasion to take full advantage of it. As this is written (June 9) rain is needed badly in this area and bees are only making a living.

From North, East, West and South

SOUTHERN CALIFORNIA, June 2

Weather throughout May has been very changeable with the majority of the time too cold to get good results from the blossoms. Light rains fell throughout the south and seemed to help a little. Falling as they did during the orange bloom, these perhaps did more harm than good.

The crop thus far is not very satisfactory to the majority of beekeepers in Southern California. Many beekeepers moved to the orange for the first and perhaps the best part of the honey flow. From early spring the indications were that there would be a heavy bloom. It was here again that weather entered into the picture. There was a good early flow of nectar. Then during the time the bloom was on, showers fell which interfered with the bees' work. There was a period of about five to six weeks when the bloom was on the orange trees. One beekeeper who had bees on the desert got some honey early, then moved several hundred to the orange, getting in just in time to hit the cold weather and miss the honey.

Black sage has yielded in some parts but it is pretty well agreed that the soil did not contain enough moisture to produce a crop of honey. White sage is yielding some nectar as well as the wild buckwheat. There is a question whether the bees will get any more than enough honey for winter stores. Most of the ranges which are a source of wild honey are now worked by the migratory beekeeper in his operations. Few of the old-time beekeepers expect to see a big crop from these sources again. By a big crop we mean around 200 pounds per colony. Once in 50 years' time we made that average.

Miscellaneous: Because of the purchase of some 11 million pounds of honey by the Government, the beekeepers will receive from 8½ cents for buckwheat to 10½ cents for white. It sounds good to the beekeepers. This will relieve the carry-over to a great extent.

While we do not know of any bees being offered for urgent sale, there is no particular demand. Bees as well as other properties will have to go through that readjustment period so far as price is concerned. Bees are always more in demand with honey selling at 10 to 12 cents per pound than when it sells for 5 or 6 cents.

Bees swarmed very heavily in many apiaries thereby cutting down the orange honey crop.

These notes are being written from Hollister, about 400 miles north of Corona where we live. The weather here is quite cool for June 2. We hear the same story as at home. More water is needed. Little rain in April has made all supplies very low. The countryside is very dry and cattlemen complain of a shortage of grass for feed. Honey-producing plants show little growth and prospects for a crop are not good.—L. L. Andrews, Corona, Cal.

NORTHERN CALIFORNIA, June 1

Weather: Rain was not very plentiful in Northern California during the past two months, although the Memorial day weekend was marked with rain in several valley locations and snow in some vacation spots in the Sierras. Locally, only 0.38 inch of rain fell during May, bringing the total precipitation for the year to 13.92 or 2.63 inches under the normal of 16.55. Cherries are being picked over a large area, grain is ripening, and the second cutting of alfalfa is being made in some places —so, rain could do considerable harm.

Plant Conditions: The various varieties of eucalyptus are still in bloom at this writing and have been producing well during the past two weeks, which is from two to three months behind the time they normally bloom. Mustard is also late and bees are making the most of their

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opportunities. Yellow star thistle has a vigorous growth where moisture is sufficient and may be in bloom ahead of time. Irrigated pastures of Ladino clover are being planted in many areas and are taking the place, to some extent, of the nectar and pollen sources previously supplied by weeds which are now being controlled to an increasing extent by chemical means. These pastures will keep queen rearing nuclei in excellent condition and may produce some surplus in the stronger colonies. Some of the seed growers are attempting to bring their various fields of alfalfa and clovers into bloom at different times in order to provide more attractive conditions for the bees. Seed fields are being irrigated more than has been the custom in past years and this will tend to prolong the blooming period and give a better opportunity for a heavier set of seed.

Bees for Pollination: Thousands of colonies are being moved into seed areas at this time to provide pollinators for carrot, onion, mustard, radish, and other vegetable seeds. Contacts are also being made for the clovers and for alfalfa. Many seed growers want from two to five colonies per acre for maximum seed production. Many of the seed producers have not had to pay any rentals for this service for so long that it is difficult to get established a workable plan which will be of mutual value to them as well as to the beekeepers supplying the bees. There are also enough beekeepers who will move long distances and place their colonies in a seed area, without charge and without any guarantee against chemical poisoning or numbers of colonies involved, to make it difficult for other beekeepers to get workable trade agreements established. Some of the older established beekeepers who depend entirely on the production of their colonies are not moving into such areas unless they receive a rental to cover the costs of moving, and some written assurance of an income either in the form of a honey crop or a share of the seed produced by their bees, as well as an understanding about the insecticide program to be used. When a seed grower retains the right to apply any chemical at any time in order to protect his seed crop, regardless of the effect on the pollinating insects, a beekeeper is extremely foolish to place even a single colony on his property or within flying distance of his fields. Most seed growers are cooperative with the beekeepers who provide the bees, especially if they pay a rental for the pollination services and realize the value of the bees to their production, but many still have to be convinced that they should pay a fair share for the services rendered. Many beekeepers realize that an acre of legume crop run for seed may produce from zero to 60 or more pounds of honey and that each colony will produce a fair share of seed but that there is seldom enough honey to be produced to make it pay off if it has to be divided between two or more colonies per acre. Also, to stay in the bee business these days, each colony must return to the beekeeper a gross income of not less than $10.00. If this does not come from honey then it must come from rentals.

The Honey Market: The sale of honey in recent weeks has been held up until the producer and the buyer could see what effect the School Lunch Program would have on the movement of honey. Considerable honey was held pending the outcome of bids. Of the 18 million pounds offered only 11,592,000 pounds were purchased. Many feel that the total amount should have been distributed among a larger number of producers. It will be interesting to see the break-down of the final eccept-ance of the bids as to quantity, regional distribution, and amounts of the different grades to be distributed. Honey retail sales are slow with little change in prices.

Miscellaneous: A number of beekeepers took advantage of the lectures scheduled for Dr. Karl von Frisch, world-wide authority on "The Language of Bees". He was well received by large audiences in Berkeley and the College of Agriculture here at Davis. Dr. and Mrs. von Frisch were delightful people and gave unstintingly of their time and energy. More people are talking now about the marvelous behavior of bees than at any time during the past several years. The beekeeping world owes Dr. von Frisch a debt of gratitude for his untiring efforts in solving the language of

bees even during the war years and under many distressing conditions. We hope that circumstances will make it possible for him to carry on his work for many years. — J. E. Eckert, University of California at Davis.

OKLAHOMA, June 1

Weather: January moisture was over three inches here in Oklahoma. Old Man Winter threw everything in the book during January except hailstones, but left moisture conditions much better off. One heavy rain, thick layers of sleet and ice and one 3-inch snow left about 3⅓ inches of moisture. That was more moisture than the Duncan area had in the last four months of 1948, which brought about a foot rise in the level of Lake Duncan and helped small grain and vetch that had suffered from drouth late last year. County Agent Fred Huffine reported stock ponds frozen and cattlemen were hauling water to cattle. Melting of heavy sleet and snow cover during February and March left soil moisture conditions in good shape. April brought warm days with April 7 temperature of 89 degrees and April 13, 87 degrees.

Honey Plants are above normal this year as we had an unusually early spring. Dandelions, locusts, willows, maples, and elms were plentiful and hairy vetch blooms brought a nice flow from this section, and clover will be blooming in about 10 days.

Honey Prices: It is my belief that price of honey is too low. Prices in 1948 averaged 18.1 cents per pound, with 24.9 cents in 1947, wholesale and retail sales combined in all size containers. Markets were dull and prices declined steadily from the beginning of the year until a low point was reached in the fall—the cost of honey going down and the cost of living rising slightly. Report from the Labor Department on May 23 says cost of living rose one-tenth of one percent. Causes are due to higher average retail prices for foods, rents, miscellaneous goods, and services. These more than offset the drop in fuel, clothing, and house furnishing.

Condition of Bees: Most colonies are extremely strong at this time. Winter losses were heavier this year than in 1948. The strength of the colony is good and the crop of young bees is here. Swarming season is almost over.

Miscellaneous: Stephens County farm owners have adopted a soil program and about 30 percent of the farm land, or about 173,467 acres, is covered by active conservation plans. Production of 81,000 bushels of alfalfa was reported for Oklahoma.

The Stephens County Beekeepers' Association with 200 members on the roll had their last meeting on May 10, with 80 members present. Our County Agent, also a beekeeper, is taking an active part in the Association.—V. K. McMasters, Duncan, Oklahoma.

SOUTHERN ALABAMA, June 3

Weather: During the first three weeks of May the weather was dry and warm. Usually the nights were cool and if not cool during the fore part of the night it was by morning. During the last week we had heavy rains, with near approach to floods. For the past three years we had our heavier rains during the first three weeks with fairer weather the last week. The weather for May for this year was nearer normal as it is classed with the drier months for this part of the state. June has come in with fair weather and quite hot.

Bees and Plants: Bees did not build up very uniformly this spring. At a time when one colony was boiling over with bees, its neighbor colony wasn't nearly built up. These conditions may not have had anything to do with it but something did cause us to have less swarming this year. I say "had" because our swarming season is over.

Because of dry weather in May the bees had a good chance at gallberry bloom. While our crop of gallberry honey was not great, it was better than it was for several years. Summer titi is now in bloom.

It blooms very profusely but usually doesn't "pay off" well. In my opinion the nectar is too thin for the bees to gather much of a crop unless it is very dry.

Miscellaneous: Most of the bees and honey from these parts are shipped to distant markets and shipping costs have gone up in the past year. This is a neighborhood where good cane syrup is produced and for generations people have eaten good syrup and not much honey, consequently our market for honey is small and we are obliged to ship it to neighborhoods where more honey is used. Uncle Sam has put his postage rates so high that it is resulting in quite a problem for us. The question is: Who should pay this increased cost—the producer or the consumer? Some producers still have their ads in the Alabama Farmers' Bulletin with honey prepaid as follows:

Native honey, $2.75 per 10-pound pail, with Fancy Florida orange blossom at $3.00. The native honey must be more or less mixed flower honey.

Syrup is being advertised for from 50 cents to $1.00 per 10 pound pail. If the price of syrup is to be compared with that of honey, it looks as if the price of honey can go but one way and that's down.

We notice by notes from Ontario that Mr. Byer has been obliged to discontinue his contributions. We always read Mr. Byer's contributions with interest. In fact, we always turned to his first. — H. G. Miller, Vinegar Bend, Alabama.

WISCONSIN, June 1

Weather: Reports sent to us from beekeepers throughout the state have this tone: "Colonies have been building up fast and there was but little winter loss. During May drouth areas developed in some parts of the state but in general there was sufficient rain to bring the clover and other plants along very nicely. The crop, of course, will depend largely upon the amount of rain we get during June and early July." In recent years there has been so much summer drouth that even strong colonies failed to get a normal crop which has discouraged many beekeepers.

Comments by Beekeepers: The writer sent a questionnaire to officers of the State Association, district organizations, and county associations, and replies from all sections indicate satisfaction with conditions during the winter and spring. Losses were reported as from 4 to 10%. In the southern half of the state most colonies are being wintered outside, both with and without packing. In the northern sections there is more cellar wintering and more packing when wintered outdoors.

Swarm control methods vary from reversing three brood chambers, which has become the most popular method with commercial and many amateur beekeepers, to variations of the Demaree method.

Clovers are reported somewhat scarce due to the 1948 drouth. Very few packages were received by Wisconsin beekeepers this spring, though quite a few queens were ordered.

The flow from dandelion and apple blossoms was good and so less sugar was fed this spring than usual.

Summer Meetings. Again cooperating with Illinois and Minnesota, the Wisconsin State Beekeepers' Association will hold its annual summer meetings at Janesville, Wisconsin, on Tuesday, July 26, and at Eau Claire on Wednesday, July 27. Representatives of bee journals and bee supply companies have been invited to attend and appear on the program. These are our annual picnic meetings at which we hear from out-of-state representatives in the industry.

The Market: Most beekeepers are sold out of honey and will not be in the market again until July or August. Movement in the stores has been slow to fair. However, it is likely to pick up when the new crop appears and there is more activity. It has been interesting to note that consumer demand and prices of consumer goods have their periods of ups and downs. Honey had its "up" during the War. Immediately when sugar came back consumers lost interest and there was a downward trend in sales and prices. We have had a gradual comeback and with prices reasonable it appears consumers will be back in the market

and the movement improve. Prices will be discussed at our summer meetings when beekeepers get together to compare notes and decide on what to charge. It is doubtful if they will be as good as last year and will depend largely upon the national crop and the price of competing items.

With sugar costing more than beekeepers received for the darker grades of honey, there will be a definite trend toward leaving more fall honey on the hives for wintering.—H. J. Rahmlow, Madison, Wisc.

WYOMING, June 9

Weather: In spite of the January blizzards which made headlines for some weeks, winter losses of bees were negligible, the heavy snow covering seeming to be a blessing in disguise. The snow went off gradually, streams raised very little, indicating that most of the moisture went into the ground. Thus far rains have been sufficient to bring crops and vegetation along in good shape.

Honey Plants: Yellow sweet clover is blooming nicely but at the moment bees are robbing and the clover is infested with thrips. There is also the threat of grasshoppers. State and County agencies, having warned us the last three years of grasshoppers, are making heavy plans for a poisoning campaign this year. Alfalfa weevil is still with us but seems to be on the wane, with no great damage so far.

Condition of Bees: Bees came through the winter in good shape owing to the favorable flow in '48 that provided plenty of stores last fall. Very little feeding was necessary. The build-up on dandelions was good and bee power is plentiful. Swarming was both earlier and heavier than usual but that is about over now.

Honey Market: Considerable 1948 honey is still in the hands of producers in Wyoming but is being well held. Sales are fair in a retail way, but honey has definitely slipped back into the position of the almost unknown since sugar rationing ended. It seems deplorable that such a deserving product of Nature that could mean so much to national health is not better known and appreciated. How we do need increased sales promotion.

Miscellaneous: Holes in the highways are growing bigger while the highway maintenance crews are busy cutting down the sweet clover before it has a chance to fully bloom. I wonder if some concerted move on the part of our industry could not delay this mowing until the flow is over. If the clovers could seed and spread from our highway barrow pits, at least part of our concern about declining bee pasture might be eased, and highway fills would be strengthened by an increase in the root systems.

The few cases of AFB showing up appear in locations where sulfa was NOT fed, is plainly new infection, and recent breakdown probably picked up from wild bees that didn't survive the past hard winter. The crop outlook at this writing is good, IF we get those occasional showers so necessary for a prolonged honey flow in Wyoming. — Earl C. Reed, Ranchester, Wyoming.

MASSACHUSETTS, June 1

Weather: The past winter was mild and bees wintered 100 percent except for those that were queenless or that ran out of stores. March was rather rough and so was early April but the mild winter made it possible for the bees to obtain pollen during the periods of flight. The latter part of April was unseasonably mild, and fruit bloom came with a rush. May has been rather pleasant and the bees have gathered sufficient stores to keep the colonies in top condition.

Condition of Colonies: Bees reached full strength for the fruit bloom about May 1. Swarm cells were present in many colonies that were crowded for brood rearing at this time, and most two-story hives contained from 12 to 16 frames of brood. Beekeepers who were producing honey were obliged to super their colonies the latter part of April. Swarming was rather heavy because of the heavy yield of nectar from maple and the heavy bloom

from fruit trees. The blueberry bloom was heavy this year and came at about the same time as apple bloom. The blueberry blossom period lasts for several weeks and is of considerable importance to bees, keeping them busy for a week or two after the apple bloom period.

White Dutch and alsike clover are just beginning to yield nectar and have made it necessary to rush the work of supering the colonies nearly two weeks ahead of normal. Here at our farm in Franklin, we have kept about 100 colonies in the home yard. We assemble colonies here for orchard rental and have experienced no difficulty in over-population as regards nectar and pollen.

We plan to distribute or move away about half this number as soon as we can find the time to move them back to our outapiaries. We have found it best during normal years to keep from 15 to 35 colonies to each outapiary. This enables the bees to gather the maximum surplus with the least danger of over-crowding the locations.

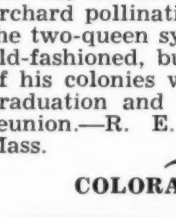
Prospects of a Honey Crop: It is difficult to estimate the honey crop until it is in the cans, but we are very optimistic this year. The latter part of May has been wet, and at no time this spring have plants suffered from lack of moisture. Clovers, goldenrod, milkweed, lithrum, and wild aster all look well and those locations near the swamps where sweet pepper is plentiful all point to a heavy bloom. Given favorable weather and sufficient super room, the honey crop in New England should reach record proportions.

Miscellaneous: The New England fruit crop this year will be above the average. This is true of pears and apple but the peach crop has suffered from late frosts while the trees were in bloom. The bloom period lasted only a very few days because of unseasonably hot weather. We were delivering our last colonies when calls were coming in for us to remove them from the orchards where they had been placed for only two days. Usually we have a rest period of ten days to two weeks, when we are beekeepers without bees, but this year there was no rest and we had to work for two or three weeks almost night and day.

New England beekeepers should not base their honey prices under the cost of production. Supplies are about double pre-war prices, and all other commodities and living costs have not been lowered. In order to keep in line and make a reasonable profit, we must maintain the price of honey to about twice what we were selling it for when we could buy hives and automobiles at reasonable prices. While the cost of labor and lumber is high we can not expect beekeepers' supplies to drop to pre-war levels, therefore if we expect to keep in business we should keep our own prices in line. Cutting prices to below cost of production is a sure way to put a beekeeper out of business. If you do not want to stay in business it would be best to offer your bees for sale, and not ruin your neighboring beekeepers. A five pound can of fine quality New England honey should be worth from $1.75 to $2.00. Maple syrup is being sold for $5.00 to $7.00 per gallon.

My son, Waldron W. Newell, is graduating from the University of New Hampshire on June 12, having completed the work in three and one half years. He is now doing graduate work for his M.S. degree at the college, doing advance work in fruit pollination and beekeeping. Last summer he spent working with Dr. Farrar at the University of Wisconsin, and is very enthusiastic on the use of two-queen colonies for orchard pollination. I have not used the two-queen system, being slightly old-fashioned, but hope to see some of his colonies when I go up to his graduation and my own 25th class reunion.—R. E. Newell, Medway, Mass.

COLORADO, June 9



Weather: This has been another spring when the seasons got rather twisted. We had several days in the 80's in April, the hottest on record for the month, and lately have been having some when the mercury stayed in the 40's about all day. But moisture conditions are good and when it does warm up, as it surely will soon, there should be a good early flow.

Bees: Colonies built up well at an early date, and where the weather

in May permitted, stored honey from wild flowers and fruit bloom quite freely. During late May and so far this month the weather has been so adverse that most colonies have consumed their reserves, putting them on a hand-to-mouth basis, and as a consequence have gone downhill. Swarming tendencies came early, too, and many colonies with old queens took off for the trees before we had young queens to replace them. We get some excellent queens and it has been our policy to keep the best ones until they begin their third season and requeen about the time the honey flow begins with a young queen in a nuc. But a season like this one shows the folly of that pseudo economy, as those colonies headed by young queens took that extra early spurt in their stride and only a very few of them "blew up".

Market: Still none locally—when people in Colorado quit something I guess they quit it for good. It is a good thing that there are other places in the country that have not gone to such drastic measures. And price reductions did not help much either. Right now Denver is one of the Nation's lowest honey markets (look at the ads in the Denver Post: 5-pound jars for 69c, for example) yet no great volume is being moved there.

Prospects for Crop: I like to predict a little at this time of year and next fall check back and see how wrong I was. This year it looks like a short crop in most places to me. And there isn't much that the beekeeper can do about it, not those who have come this far intending to produce a full crop. By that I mean that conditions beyond the beekeepers' control are pretty much on the adverse side. Weevil damage is worse this year over much of the middle West. It began early. And there are more little grasshoppers than I have seen for years. Not just here at Grand Valley but all over the state and in many other states as well. The bees can't make much honey from clover and alfalfa when the grasshoppers get there first. It looks rather discouraging. However, a short crop might help the national picture in marketing. It might be well if we were forced to cut our production down to the level of demand and clear the markets for once and thus be able to start 1950 with a market nearly bare of honey. At any rate we shall see how wrong the prediction was.—J. W. Holzberlein, Jr., Grand Valley, Colorado.

ONTARIO, June 10

Weather: In any discussion pertaining to beekeeping, verbal or written, weather conditions almost invariably enter the picture. Perhaps this is natural, because weather more than any other factor is what determines whether a beekeeper ends up his year in the red or otherwise. Well, as these notes are being written on June 10, Ontario is in the grip of a severe drouth. Subnormal snowfall last winter and scarcity of rain during the spring have combined to produce a situation that threatens to become disastrous unless rain and plenty of it comes immediately. In many sections hay crops are practically a failure, pastures are drying up, and grain crops stunted. Small fruits will be below normal yield. As if that were not sufficient, frosts on two successive nights destroyed vegetable and tobacco crops in some areas.

Prof. Gordon Townsend of the Ontario Agricultural College has told me that the legume experiments on the college farm at Brampton may have to be abandoned. Provincial Minister of Agriculture, T. L. Kennedy, states that the drouth is costing Ontario farmers five million dollars each day it continues. How much it will cost the honey industry remains to be seen. However, to strike a more optimistic note, by the time these notes are in print, copious rains may have fallen and the countryside may be lush and green once more.

Field meetings are the order of the day at present. A series of meetings at short intervals extend pretty well all over southern Ontario. A corps of speakers moves along from one meeting to another, and the beekeepers usually make the occasion a picnic, either at a beekeeper's honey house or some outdoor picnic spot, of which there are plen-

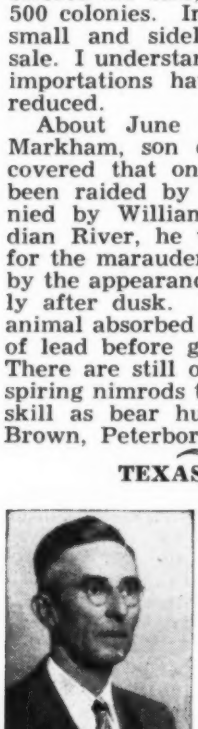
ty within easy reach of most sections of the province. While the attendance at these meetings is not all that could be desired, those who come get first-hand information on new developments in beekeeping, scientific, practical, and commercial.

Locally, bees are in excellent condition. Winter losses were low, and a profusion of early bloom before the drouth became severe, stimulated brood rearing, and practically all colonies are strong and ready to go as soon as a honey flow materializes.

The decline in honey prices is having its inevitable effect. In a recent issue of the Canadian Bee Journal 2200 colonies of bees were offered for sale, some outfits up to 500 colonies. In addition numerous small and sideline outfits are for sale. I understand also that package importations have been drastically reduced.

About June 1 Walter Byer of Markham, son of J. L. Byer, discovered that one of his yards had been raided by a bear. Accompanied by William Thompson of Indian River, he waited one evening for the marauder and was rewarded by the appearance of the bear shortly after dusk. I am told that the animal absorbed an amazing amount of lead before giving up the ghost. There are still opportunities for inspiring nimrods to demonstrate their skill as bear hunters. — Allan T. Brown, Peterborough, Ontario.

TEXAS, June 10



Weather: The temperature for May was above normal. Rainfall was extremely variable, ranging from only light showers over most of south Texas where crops and pastures are sorely in need of water, to generally heavy rainfall extending across the northern sections of the state. Unprecedented floods along upper Trinity River and hail and tornadoes in widely separated communities resulted in considerable loss of life, crops, and other property.

Bees and Honey Crop: In several counties near the Mexican border and the lower coastal bend a crop averaging from 20 to 60 pounds from catsclaw, mesquite, and guajillo has been extracted. While the early flow in the Lower Rio Grande Valley was disappointing, record acreage of cotton is now in bloom. However, few colonies are now kept in the Valley because of danger from insecticidal poisoning which caused heavy bee loss last year. There is some prospect of a summer bloom of mesquite in southwest Texas but many yards have been moved to vetch and sweet clover in central and northern sections of the state. Some honey was stored from marigold **(Gaillardia)** in the blackland area. Horsemint is more abundant than was expected earlier with a heavy yield coming from this source. In mixed soils of south Texas the flow was light as a result of drouth. At last reports vetch was in full bloom and yielding well.

Excessive rainfall in the northern and high plains areas was detrimental to cotton. From present indications over the state prospects for a honey crop are at least better than last year.

Market: The new honey crop is now appearing on the market with movement fair at prices which have prevailed during recent months. Light grades of extracted and comb honey are in good demand. Considerable honey of the last year's crop remains in producers' hands, practically all of which is of dark grade for which there is little demand.

Miscellaneous: Legume seed growers are becoming more conscious for the need of bees for pollination, particularly vetch, sweet clover, and alfalfa, with the demand for bees greater than in any previous year, and many yards were moved to these fields. A good many farmers, however, are pasturing their fields, preferring to market the sweet clover crop in the form of beef rather than clover seed in expectation of a reduction in price of the seed. This has resulted in a rather heavy concentration of bees in some fields grown for seed, to the extent that in some cases upward of three or four colonies are available per acre of clover. No doubt maximum pollination of the clover will be attained to the benefit of the grower. However, surplus honey per colony obtained by the beekeeper will be greatly reduced.—A. H. Alex, San Antonio, Texas.

Just News

The joint meeting of the **North Dakota-Minnesota Beekeepers' Associations** will be held in Detroit Lakes, Minnesota, on July 28 and 29. An excellent program is being arranged. Dr. J. E. Eckert of California, a nationally prominent beekeeping specialist, is planning a survey of the midwestern states this coming summer. It is hoped that he and other beekeeping specialists will be in attendance at this meeting. The question of insecticides and their use on the farms, particularly in the control of grasshoppers, cut worms, corn borers, and such, with particular reference to their effect on beekeeping, will be discussed. New production features such as the use of hybrid queens and specialized methods of hive manipulation will be prominent features on the program. Marketing and price stabilization will occupy a considerable part of the closing day. The fun fest is to be on the evening of July 28. Don't miss this part of the program. Take a couple of days off before extracting and come to the meeting.—R. W.Anderberg, President.

* * * * *

The Mississippi Beekeepers' Association will hold its annual meeting at Mississippi State College on August 3 in connection with Farm and Home Week, sponsored annually by the College. There will be several thousand farmers here at that time, and we hope to have a number of beekeepers in attendance. In addition to the regular program on August 3, a school of instruction for beginners will be held on the following day.—Clay Lyle, Secretary.

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The Scottish Beekeeper for May announces the death on March 19 of Philip Bruce White, the discoverer of the cause of the so-called Isle of Wight or acarine disease. In May, 1920, he showed his associates mites later called **Acarapis woodi** in the tracheal trunks of diseased bees, and although a single mite had previously been found in that location in a honey bee, the relationship of the mite to the disease was not before imagined. White wrote three papers on bees, out of a total of 57 scientific publications, and all of his later work was in other fields. In 1941 he was elected a Fellow of the Royal Society.

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The Illinois State Beekeepers' Association summer meeting will be held on July 24 at Mt. Sterling with a lively program, games, and fish fry. Gladestone Cale is in charge of affairs.

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The annual summer meetings of the **Wisconsin Beekeepers' Association** will be held at Janesville on July 26, and at Eau Claire Lakes on July 27.

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I wish to extend an invitation to all beekeepers everywhere to attend our Bee and Honey Show at the Illinois State Fair this year. The fair is in Springfield and the dates are August 12 to 21. Each year we have a Beekeeper's Day and visitors from far and near show up on this day to scrape the propolis off their shoes and enjoy the fair. Each year we take advantage of Governor's Day to have our own Beekeeper's Day. This year the date is August 18. Hi! Ho! Come to the Fair!—Carl E. Killion, Supt. of Bees and Honey.

* * * * *

The Westchester County Beekeepers' Association will hold its next regular outdoor meeting on Sunday, July 17, at 2:30 p.m. at the home of Frank Burgmaier, 43 Lafayette St., New Rochelle, N. Y. Following the short business meeting there will be given an actual demonstration of hive inspection by the Mutual Assistance Committee. Refreshments will be served and visitors are always welcome.—B. F. Miller, Publicity.

* * * * *

Mrs. Clarence P. May, Sr., of Andover, Massachusetts, known to many beekeepers in that area, died on June 3. Our deepest sympathy to the family and friends.

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The XIIIth International Apiculture Congress will be held in Amsterdam from August 22 to 27, 1949, inclusive, under the auspices of the Society for the promotion of api-

(Continued on page 456)

Asked and Answered

Placing Excluder Over Bottom Board

Question: By placing the queen excluder on the bottom board and closing all other entrances I believe it will prevent swarming as the queen can't get out. Is this practical?—Noah D. Smith, Ohio.

Answer: A queen excluder placed directly over the bottom board or under the bottom brood chamber has been used to some extent by a few beekeepers. As you say, dead drones are likely to collect on the queen excluder. Not being able to get out, they naturally die. It is possible, of course, to remove the queen excluder periodically in order to get rid of the drones. The main objection to the use of an excluder over the bottom board is that in the event a queen is superseded and a young virgin queen emerges from a cell, she is not able to get out of the hive to mate and consequently the colony will eventually become queenless. In fact, the colony will become hopelessly queenless.

Does Hearing Device Agitate Bees?

Question: Does wearing a hearing device agitate bees? I have three colonies, and on three different occasions when we had fruit bloom and dandelion, with bees working freely, I was stung right over the left eye under my glasses. My microphone was in my upper left vest pocket just six inches or so below the stings with the current running. I was not working with the bees and was at least 100 feet away and not in line of flight.—James L. Hendry, Ky.

Answer: Although a number of beekeepers wear hearing aids, we have never heard that bees are irritated by them. It is true that anything round or shiny, like the lens on a camera or eye glasses, seems to bother the bees—perhaps it looks like the eye of an animal. The ear piece of a hearing aid, if black and shiny, might similarly cause irritation. Our E. R. Root has worn an electric hearing aid for a great many years and he has not reported anything of the kind.

How to Render Wax and How to Prevent Wax From Discoloring

Question: What causes wax to turn dark after being melted? What can be used to cause refuse to settle out of wax?—J. H. Sturdevant, Nebr.

Answer: Most metals, except stainless steel or chromium plated steel, will turn beeswax dark, especially if the temperature is high and the interval long. A baked enamel receptacle is safe for beeswax, but remember that for the sake of safety and to prevent injury to the beeswax, it should always be melted with water so that it can never reach a temperature higher than that of boiling water. If heated without water, beeswax may reach a temperature where it will break down. Such wax is then really injured and cannot be sold as beeswax. If there is always water in the bottom of the receptacle this danger is avoided. Small enameled kettles are rarely strong enough and are usually of a size too small to be worth while. It takes a lot of labor to fuss with rendering small amounts of combs or cappings. Frequently a used bath tub may be purchased locally and if it is of cast iron construction and the baked enamel is not badly chipped, such a receptacle makes a good container for rendering wax. It is large enough to hold the heat a long time in case no steam is available for keeping the contents hot.

A grating, preferably of oak slats, should be made for the bottom of the tub, the pieces being curved to fit the curve of the tub so the top of the grating will be flat. There should also be a heavy follower, preferably of oak, the underside cleated, and of a size that will just fit down into the tub.

Burlap sacks are all right to hold the old comb or refuse provided there are no worn places. Large square pieces of burlap, however, are less likely to burst. Two fairly large sacks of comb may be rendered at once, arranged on the lower grating.

Two builders' jacks may be used for applying the pressure, or even automobile jacks, provided the latter are of heavy construction. To use the jacks, uprights must be solidly bolted to a platform under the tub and there should be two overhead members crosswise of the tub, each made of two hardwood 2 x 6's or 2 x 8's. If these are crosswise of the tub there is less danger of bowing them up out of shape than if one long cross bar is used lengthwise.

When ready to render the wax,

the sacks of comb or refuse should be neatly arranged on the slats, and boiling water acidified with vinegar heated in a spearate kettle should be poured in until the comb is submerged. After a few minutes of soaking, pressure may be applied, gradually at first. If steam is available, a pipe can extend down into the tub to keep the whole mass hot. After all the pressure is applied, and while the jacks are still turned down, the water and wax should all be drawn off the bottom, and while the pressure is still on, a pailful of boiling water should be dumped over the inside of the tub to wash out any remaining wax that clings to the followers.

If it is not feasible to draw out hot water and wax, the whole outfit may be covered up and allowed to stand until the next morning when the wax may be broken up and lifted off the top of the water. If steam is available so that the water and wax can be kept hot all day, more thorough work can be done. In that case the pressure should be increased slowly every hour or so.

Determining Which Hive Has Cast a Swarm

Question: How does the expert beeman tell from which particular colony a swarm has issued if he doesn't actually see it come out? I suppose merely glancing at the entrance would be sufficient for the experienced. This has always been more or less of a problem for me. With a swarm nearby, I have gone through every colony and have been unable to tell which one cast it.—F. D. Simpkins.

Answer: It is usually possible to tell from the appearance of the hive entrance which colony has cast a swarm. You are likely to find a few bees walking arround on the alighting board and possibly a few drones as well. When all of the colonies are populous during swarming time, it is indeed difficult upon examining them, to determine from entrance diagnosis just which colony has swarmed. When examining combs of colonies one can usually tell from seeing capped queen cells whether a swarm has issued.

Is Uniting of Colonies in Fall Feasible?

Question: When two good colonies of bees are united in the fall is the act a waste of bees or are the bees worth as much in one colony as in two?—L. T. Smith, Mass.

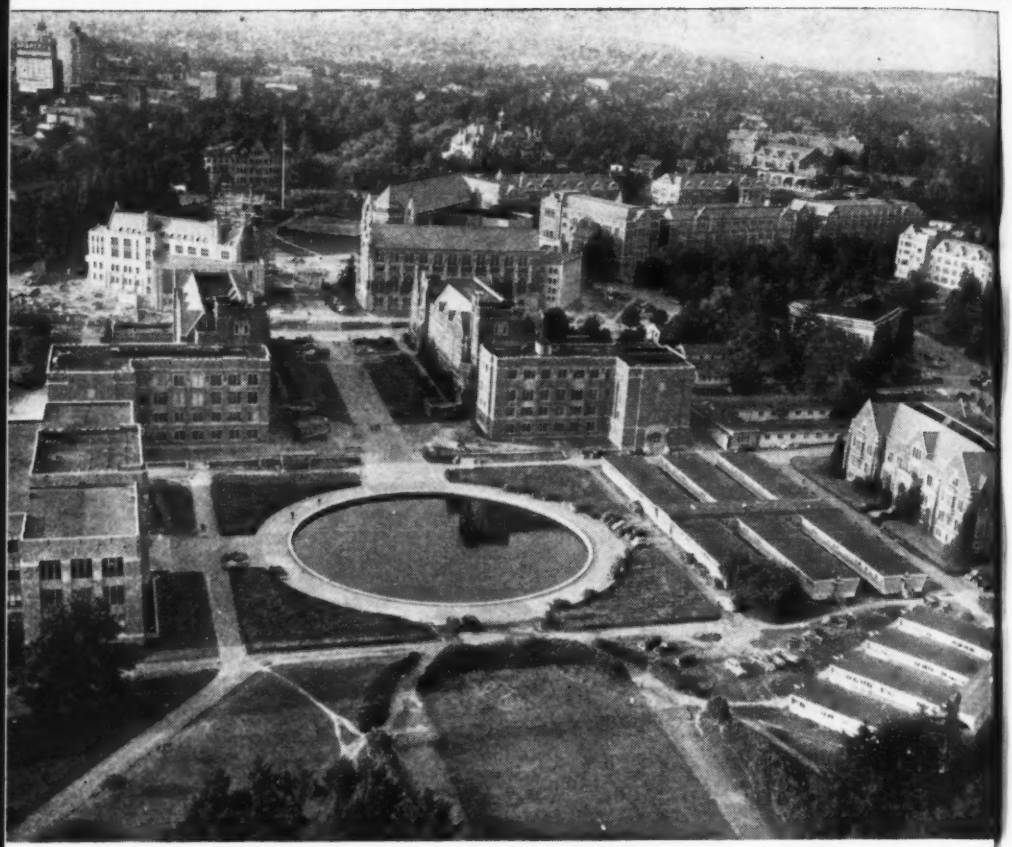
Answer: The question is not easily answered. To unite two good colonies in the fall would save on stores because two colonies united would not eat as much food during the winter as two colonies would if left ununited. However, if the large united colony is divided the following spring, it would be necessary to purchase a laying queen for the queenless division. However, there are some commercial beekeepers in the Red River Valley who practice what you have in mind. They divide strong colonies during the dandelion and fruit bloom flow in the spring, giving the queenless divisions young laying queens. In the fall after the surplus honey is removed they unite colonies that were divided in the spring, placing the colony with the young queen on top of the colony with the old queen. In most cases the old queens are disposed of and the young queens are retained. In this way requeening is done without dequeening. As already stated, some bee food is saved because a united colony would not eat as much as two colonies would if they were not united. Furthermore, in the spring these very populous colonies need overhauling about fruit bloom time to control swarming. It is a simple matter to divide such colonies, giving the new divisions young laying queens. This dividing is a swarm control measure and at the same time requeening is accomplished.

Using Comb Honey Super Instead of Excluder

Question: When the Demaree plan is used for swarm control i.i the production of comb honey, would the placing of a comb honey super between the queen below and the brood above serve just as well as a queen excluder to keep the queen in the lower hive body?—Ralph Saxer, Pa.

Answer: It would appear that placing one or more comb honey supers between the two brood chambers, instead of using a queen excluder and having the queen in the lower chamber, might result in the queen being kept down below. In some instances this would work and in others it would not. Some years ago when we had a good crop of extracted honey we tried placing a comb honey super above a Jumbo brood chamber, with the queen below, instead of using a queen excluder. There were already three or four partly filled extracting su-

(Continued on page 464)



Part of the beautiful campus of the University of Washington at Seattle, Washington, where the Pollination Conference is to be held.

POLLINATION CONFERENCE

University of Washington Campus, Seattle, Washington
July 12-13-14, 1949
Sponsored by
The Honey and Pollen Plants Committee
of the American Beekeeping Federation
Headquarters — Edmond Meany Hotel

July 12

9:00 a.m. Registration:
Guggenheim Hall, University of Washington
Registration Fee: $3.00

10:00 a.m. Chairman: Dr. S. W. Edgecombe, Prof. of Horticulture, College of Agriculture, Logan, Ut.
Welcome to Washington—Gov. Arthur B. Langlie
Address of Welcome—Dr. Wilson Compton, Pres., State College of Washington
History of Pollination—(Either Webster, Todd, of Hambleton.)
Discussion:
Announcements:

12:30 p.m. Lunch Hour:
Riatt Hall, The Commons

1:30 p.m. The Function of the Extension Service Nationally and Locally in a Pollination and Planting Program
—Director E. V. Ellington, Extension Service, Washington State College
Fruit Production and Beekeeping—Fred L. Overley, Supt. and Horticulturist, Wenatchee Tree Fruit Experiment Station
Discussion:
Prof. Henry Hartman, Head, Horticulture Dept. Oregon State College
Dr. T. A. Merrill, Head,

Horticulture Dept., State College of Washington
R. M. Bullick, Assistant Horticulturist, State College of Washington
Legume Seed Production and the Bee Industry—Harry A. Schoth, Agronomist, USDA, Corvallis, Oregon
Discussion:
Harold Singleton, Supt. and Agronomist, Irrigation Experiment Station, Prosser, Washington
(Possibly Todd and Knowlton, also.)

6:30 p.m. Dinner: Frank C. Pellett Birthday Banquet

July 13

9:00 a.m. Vegetable Seed Production and Pollination—Dr. S. W. Edgecombe, Head, Dept. of Horticulture, Utah State Agriculture College, Logan, Utah
Pollination in Canada—E. Braun, Agriculture Scientist in Apiculture, Experimental Farm, Dept. of Agriculture, Manitoba, Canada
Soil Conservation and the Pollination Problem — Dr. R. N. Bond, Regional Biologist, Soil Conservation Service, Portland, Oregon

1:30 p.m. Nectar and Pollen Plants in the Forest Service Range Management Program—Joseph F. Pechanac, Chief, Division of Range Management, Pacific Northwest Forest and Rangement Experiment Station, Portland, Ore.
Message From R. B. Willson—Former Chairman of Honey and Pollen Plant Committee
Wild Life and its Dependence on Seed Production—Norman P. Knott, Chief, Land Management Div., The Dept. of Game, Seattle, Washington
Discussion:
How the Railroads Fit into to the Picture—Bill Duncan, Agricultural Agent, Great Northern Railroad, Seattle, Wash.
Discussion:
Evan W. Hall, Agricultural Agent, Milwaukee Railway, Seattle, Wash.

7:30 p.m. Open Round Table Discussion:
Moderator: Glenn Jones, Sec.-Treas., American Beekeeping Federation
Colored Moving Pictures: Nectar and Pollen Plants (Taken by H. H. Root, Medina, Ohio)

July 14

9:00 a.m. Highways and the Beekeeping Industry — (Representative from Oregon State Highway Commission, Salem, Oregon)
Discussion:
Representative from the State of Washington Highway Department
Bee Poisoning in Relation to Pollination—Dr. J. E. Eckert, Apiculturist, University of California
Discussion:
Dr. H. S. Telford, Asso. Entomologist, State College of Washington
As the Program Looks From Here—Frank C. Pellett, Editor, American Bee Journal, Founder of Pellett Gardens

1:30 p.m. Pharmacy Plants and Pollination Experiments—Visit to the University Garden of Medicinal Plants
Conducted tour by:
Frank Pellett, Editor, American Bee Journal, Founder of Pellett Gardens
Ludwig Metzger, Supervisor, Garden of Medicinal Plants, University of Washington, assisted by:
Dr. H. W. Youngken, Jr., Asst. Prof. Pharmacology, University of Wash.
Dr. C. A. Neva, Instructor of Pharmacology, University of Wash.
Summary and Recommendations Committee—James I. Hambleton, Head, Division of Bee Culture, USDA, Washington, D. C. (Other members of committee to be added)
Reports of Committees

7:00 p.m. An Evening of Entertainment

JUST NEWS

(Continued from page 451)

culture in the Netherlands. During this Congress an effort will be made to bring about the establishment of an international federation of apiarist societies. Invitations have been sent to various organizations of our industry in U.S.A. and it is hoped that our country may be well represented. We also hope that eventually an international beekeeping association may be formed.

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The midsummer meeting and picnic of the **Berks County Beekeepers' Association** will be held at Hereford Hills Orchards, Roland Johnson, Proprietor, on Saturday July 23, beginning at 2:00 p.m. There will be contests and refreshments and interesting speakers including William Clark of Penn State. — Henry F. Phillips, Sec.

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The summer meeting of the **Ohio State Beekeepers' Association** will be held on August 10 and 11. The first day's meeting is planned to be held on Kelley's Island and the second day's meeting on Pelee Island. Further details will appear in the August Gleanings.

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The State of Michigan has an Agricultural Advertising Fund of $800.00 which has been allocated to the beekeeping industry in the state. This is given provided the beekeepers spend $1000.00 and submit paid bills. Should they pass up the grant it will go to some other farm project. Each year they have been having a hard time to borrow and raise the money. This year a plan has been worked out to raise money at the summer meetings. (See the following item.) It is the hope that sufficient funds will be raised to put over the project.

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Michigan Beekeepers Welcome You to Their Summer Meetings July 28 and 29

The first day's meeting of the Michigan Beekeepers' Association will be held in the Hunting and Fishing Club Lodge, Bertha Brock Park, three miles west of Ionia on M-21. The bridge in the city has been completed and there will be no detours. Local arrangements for dinner and entertainment are being handled by the Ionia County Beekeepers' Association. Dinner reservations should be made with Mrs. Margaret Seidelman, Rt. 3, Ionia, Michigan, before July 21. Early reservations will avoid the congestion experienced last year.

A "Visiting" hour is planned for 9:30 to 10:30.

At 10:30 will be the Welcome by the Mayor of Ionia and the Secretary of the Chamber of Commerce. This will be followed by the Business Session and appointment of the Nominating Committee.

11:30—We have asked Lawrence O'Neill, Director, Bureau of Agricultural Industry, State Department of Agriculture, to address us on the subject "How the State Department of Agriculture Serves the Beekeeper".

12:00—Dinner and Entertainment.

1:00—Introduction of out-of-state guests.

1:15—"The Dignity of Farming", an address by Stanley Powell, Michigan State Farm Bureau.

At 1:45 we have planned a discussion on "Bee Pasture and Pollination", and have asked the following to take part: Robert H. Dadant of Dadant & Sons, Hamilton Ill., Leland Hubbard of Hubbard Apiaries, Onsted; Lewie Webb, Ionia County Agricultural Agent; Prof. R. H. Kelty of Michigan State College; Henry Fase of Ada; and Prof. Howard Potter of Alma College. Group discussion will follow.

3:15—Archery Demonstration.

3:30—A discussion "Merchandising Honey", with the following invited to participate: Alan I. Root of The A. I. Root Co., Medina, Ohio; Don P. Barrett of State Department of Agriculture; A. Tennenhouse of Prairie View Honey Co., Detroit; W. R. Keasey, Editor of Michigan Food News; Baxter Woodman of Grand Rapids; Forest Smith, Sec., Michigan Agricultural Conference. Open discussion will follow.

5:00—Report of Nominating Committee.

Gifts at Elk Rapids Meeting

The drawing for gifts will take place at the next day's meeting, July 29, at Elk Rapids. The meeting will be held in the village park, easily located. Elk Rapids is on US-31, in Antrim County, north of Traverse City.

The Michigan Honey Institute is

The cover picture on this issue shows an enlarged view of this unusual setting for an apiary. The bees are located on a cranberry marsh near Wisconsin Rapids, Wisconsin, and are owned by O. G. Hammond. Mr. Hammond's daughter, Mrs. Wiederholt, took the picture.

out to raise $1,000.00 for its honey advertising revolving fund. Your contribution will be appreciated. To help the campaign several firms have donated gifts to be distributed at the meeting. Your contribution of one dollar may be mailed to A. B. C. Woodman of A. G. Woodman Co., Grand Rapids 4, Mich. For each dollar mailed in before July 25, Woodman will mail you five receipt slips, the stubs of which will be used in the drawing for gifts. Anyone may qualify. Your presence will be appreciated, but not required. You can contribute direct at the meetings.

You May Win one of these gifts (listed with donor)

1 30-frame Radial Extractor — A. G. Woodman Co., Grand Rapids.

1 N-40 Uncapping Machine—The A. I. Root Co., Medina, Ohio.

3 Folding Bee Veils—The Hubbard Apiaries, Onsted, Mich.

1 Observation Hive—Michigan Bee & Farm Supply, Lansing, Mich.

1 Lev-L-Drain Bottom Board—G. B. Lewis Co., Watertown, Wis.

1 Package Foundation—Dadant & Sons, Hamilton, Ill.

1 "Hive and Honey Bee", revised, book, Dadant & Sons, Hamilton, Ill.

10 3-lb. Packages Bees with Queen — Jackson Apiaries, Funston, Ga.

6 3-lb. Packages Bees with Queen—The Wilbanks Apiaries, Claxton, Ga.

3 3-lb. Packages Bees with Queen—The Stover Apiaries, Mayhew, Miss.

2 3-lb. Packages Bees with Queen—John T. Knight, Hayneville, Ala.

2 3-lb. Packages Bees with Queen—Rossman & Long, Moultrie, Ga.

(All packages 1950 delivery)

10 Queens (1949) — John T. Knight, Hayneville, Ala.

10 Queens (1949) — Champion Apiaries, Hayneville, Ala.

6 Queens (1949) — Rossman & Long, Moultrie, Ga.

Unspecified number Queens (1949)—Bessonet Bee Co., Donaldsonville, La.

5 Queens (1950)—The Stover Apiaries, Mayhew, Miss.

250 Mill-Run Split Sections — August Lotz Co., Boyd, Wis.

10 Packages Ironsides Foundation—Fred W. Muth Co., Cincinnati 2, Ohio.

Other gifts are being added, and proper credit will be given the firms contributing.

The program at Elk Rapids will follow the themes used at Ionia, with the following asked to appear on the program: Carl H. Hemstreet, District Horticulturist, MSC, Traverse City; Walter Kirkpatrick, Antrim County Agent; Frank Slusher, of Traverse City; Floyd Hatch of

(Continued on page 468)

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate:—15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

CLOVER HONEY, No. 1 white extracted, 16c lb. in 60's. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

NEW CROP of honey shipped daily from producer in Florida. Pure orange blossom, 5 lb., $2.25. Pure Florida comb honey, 5 lb. pail, $2.75. No C.O.D. orders, all shipments prepaid. E. R. Raley, Daytona Beach, Box 1610, Florida.

FLORIDA WHITE TUPELO, the world's finest honey—pure orange blossom honey — white clover, and buckwheat honey shipped in barrels, 60-pound tins, gallon cans, or in glass by the case. Pure maple syrup. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

CLOVER extracted honey in sixties. Abram H. Brubaker, Lancaster, Pa., Rt. 1.

FOR SALE—Comb and extracted honey ready about July 10. C. W. Schrader, Waterville, N. Y.

SEVERAL HUNDRED new 60-lb. cans clover honey. Excellent quality. Paul Engelhardt, Antwerp, N. Y.

EQUIPMENT for 500 complete stands, supers with and without drawn comb, 45-frame Root extractor with motor, honey pump, tanks, and everything, lots of foundation. Priced to sell. Walter Boyd, Bigelow, Mo., R.F.D. 2.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED — White and amber honey. Any amount. D. F. Treap, 316 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—Honey and wax, any quantity. Send samples and prices. Alexander Company, 819 Reynolds Rd., Toledo 7, Ohio.

CASH FOR YOUR HONEY — Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles 21, California.

WANTED—EXTRACTED HONEY— Clover or light amber. C. H. Denny, 483 Moody St., Akron, Ohio.

HONEY AND WAX WANTED — Mail Sample. Advise quantity. BRYANT & SAWYER, 2425 Hunter St., Los Angeles 21, California.

WANTED—Honey of all types in any amount. Send sample and best delivery price. Get Root Supplies now in exchange for 1949 production. Buckeye Honey Co., 2930 N. High St., Columbus, Ohio

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

COMB HONEY WANTED—Section and Cut-comb. Advise grade, quantity, and how packed. F. H. Hauck, P. O. Box 84, Kew Gardens, N. Y. Bank reference furnished on request.

WANTED—Extracted and comb honey for our honey routes. Weldon Bee Farms, Warrensburg, Mo.

FOR SALE

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

WE CARRY a full line of ROOT QUALITY Bee Supplies. Prairie View Honey Co., 12303 12th St., Detroit 6, Mich.

FOR SALE — Write for large free Bee Supply Catalog. We manufacture bee hives, foundation, tanks, and extractors. Listing many items not found in other catalogs. Walter T. Kelley Co., Paducah, Ky.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Michigan.

The only comb foundation plant in the East. We sell foundation, work your wax, render comb and cappings. Twenty-nine years' experience. Robinson's Wax Works, R.D. 3, Auburn, N. Y.

10-frame hive bodies nice drawn combs, $5.00 each; metal covers, $1.00; bottoms, 75c; inner covers, 50c; excluders, 75c; hive bodies, $1.00. Irvin VanDevier, Medina, O.

BEEKEEPERS! We have them, you need them! VOHO Entrance Closures. Completely screen a hive in 3 seconds yet insure ample ventilation. Uppers, .80. Lowers $1.30 plus postage. Cheaper in quantity. VOHO Smoker Snuffers, that little fire preventer. Complete smoker control for only 75c postpaid. Literature on request. Dealers invited. VOHO PRODUCTS, 2916 Orange St., Norfolk 13, Virginia.

FOR SALE — 40 8-frame hive bodies with drawn combs, $45.00 any place. Fred Krause, Route 2B, Barron, Wis.

CORRUGATED CASES for 60-lb. cans. Prices reasonable. C. W. AEPPLER COMPANY, Oconomowoc, Wisconsin.

YOUR WAX WORKED into quality medium brood foundation for 23c pound; 100 lbs., $19.00. Also medium brood foundation for sale at 75c pound. Fred Peterson, Alden, Iowa.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements, but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

GOOD ITALIAN QUEENS, 75c each. D. W. HOWELL, Shellman, Georgia.

BOOKING package bees with Caucasian or Italian queens for spring delivery. Miller & Evans, Three Rivers, Texas.

CAUCASIAN QUEENS — 1 to 9, $1.00 each; 10 to 49, 90c each; 50 and more, 75c each. Howard E. Crom, Rt. 1, Box 75, Ripon, Calif.

CAUCASIAN—2-lb. pkgs., $3.00; 3-lb., $3.75. Queens, 75c. Lewis & Tillery Bee Co., Rt. 1, Box 280, Greenville, Ala.

ITALIAN QUEENS—Quality, health, satisfaction guaranteed, $1.00. O. E. Brown, Route 1, Asheboro, North Carolina.

IMPROVED Italian Queens bred for honey production, 60c. Package bees, three pounds with queen, $3.50. Henry Loehr, Caldwell, Texas.

IN FLORIDA—600 1½-story colonies, $10.00 each; Cypress hives, combs in good condition, all young queens. With six frames of brood or more, and ready for production. No disease or junk, extra equipment below cost. Box 1610, Gleanings, Medina, Ohio.

EARLY PACKAGE BEES. Prompt shipment begins May 10. Two-pound package and queen, $5.50 postpaid. Three-pound package and queen, $6.60 postpaid. Choice Italian queen, $1.50. Safe arrival guaranteed. Birdie M. Hartle, Reynoldsville, Pa.

GOLDEN — GOLDEN Italian bees and queens, finest of quality. 2 lb. with queen, $3.00; 3 lb. with queen, $4.00; 1 to 25 packages. Write for prices for larger orders. Select untested queens, 1 to 25, $1.00 each; 25 up, 90c each. Tested, $2.00 each. Breeders, $5.00 each. Carolina Bee Farm, W. O. Curtis, Mgr., Graham, N. Car.

REAL PETS—Brown's non-sting, non-swarming bees. Good producers. Season's price, $2 a queen. Brown's Apiary, Cape May Court House, N. J.

CAUCASIAN QUEENS, 75 cents each. Eppling's Apiary, "Idlewilde", Covington, Virginia.

LIMITED NUMBER of northern queens reared in large nuclei available at $1.00 each, or 90c in lots of 100 or more. Wm. L. Coggshall, S. Lansing, New York.

WILL SELL 600 COLONIES with crop and locations. No better equipment in New York State and priced for quick sale. Inspection certificate furnished. Wm. L. Coggshall, S. Lansing, New York.

HONEY LABELS

Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

MICHIGAN HEADQUARTERS for

Root QUALITY

Bee Supplies

Complete Line of Bee Supplies and Honey Containers
Prompt Service

MICHIGAN BEE and FARM SUPPLY

Main Office — Mail Order Address
Box 7 Lansing, Michigan

Northern Branch
US-31 South Side
Elk Rapids, Michigan
Open Fridays and Saturdays on and after May 6.

We carry complete stock of
The A. I. Root Company bee supplies for immediate delivery. Write or telephone:

H. H. Jepson Co.

146 Oliver Street, Boston, Mass.

HONEY WANTED

Carloads and less than carloads. Mail sample and best prices in all grades.

C. W. AEPPLER COMPANY

Oconomowoc, Wisconsin

Mack's Queens

(They Speak for Themselves)

Big, Hardy Northern Bred Italians. Reared by Mack's exclusive method and when safely introduced will give superb service this season as well as next. We rear them to do just that. That's why we say "They Speak for Themselves". At present we are filling orders within six hours after received.

Price, $1.00 each

HERMAN McCONNELL & SONS

Robinson Rt. 2 Illinois

Queens! Queens!

Italians

75c each after May 15th

$7.00 per dozen

Every queen guaranteed and shipped Air Mail. They produce.

Walter D. Leverette Apiaries

P. O. 364

Ft. Pierce, Fla.

THREE BANDED ITALIAN QUEENS

of a Select Quality

Produced in nucs with three standard size brood frames. Live delivery and pure mating guaranteed.

Untested, $1.00 each

FRED C. BROCK

McDonald, Tenn.

"35 Years with the Bees"

You'll Like

The Beekeepers Magazine

$2.00 a Year

Write for Sample Copy

E. Elmer Carroll—Publisher

3110 Piper Road, Lansing 15-B, Mich.

NORTHERN BRED ITALIAN QUEENS. Finest quality for production. $1.00 each. Shirl Baker, Rodney, Michigan.

FOR NEW JERSEY BEEKEEPERS — Strong 3-frame nuclei with disease resistant queens, $6.00 each. Make appointment before coming. Tom Mettler, East Millstone, N. J.

50 COLONIES OF BEES, equipment to operate 250. Brand capping melter, 20-frame extractor, reasonable. Everett Rulison, Washington, N. J.

YES, ALL COMPARISONS prove that Green's profit producing queens are the best to be had. They will please you from the brood nest to the harvesting of a great crop of honey. Backed by 22 years of breeding better queens. Price, 80c each. D. P. Green, Deland, Fla., Rt. 2.

CAUCASIAN bees and queens, 2 lb. and queen, $3.00; 3 lb. and queen, $4.00. Select queens, untested, 80c. Tested, $2.00. Black River Apiaries, Elliott Curtis, Mgr., Currie, N. C.

QUALITY CAUCASIAN BEES — Book your orders with us now and get them when wanted in 1950. Bolling Bee Co., Bolling, Ala.

BREWER'S line-bred Caucasian Queens, 1-99, $1.00; 100 and up, 75c. Member ABBA. Brewer Brothers Apiaries, 3616 Caucasian Circle, Tampa 9, Florida.

THREE BANDED Italian bees and queens, best of quality. 2-lb. and queen, $3.00; 3-lb. and queen, $4.00. Select untested queens, 1 to 25, $1.00 each; 25 to 50, 90c; 50 up, 80c. Health certificate with every order. Prompt service. Alamance Bee Company, Graham, N. C.

GOLDEN Italian Package Bees and Queens. Two pounds, $4.00; three pounds, $5.00; Queens, $1.00 each. Guilford Apiaries, 4300 A. Burlington Rd., Greensboro, N. C.

THREE BANDED Italian Package Bees and Queens. Two pounds, $4.00; three pounds, $5.00. Queens, $1.00 each. Bessemer Apiaries, 4300 A. Raleigh Road, Greensboro, No. Car.

REQUEEN REGULARLY with the best stock your money can buy. Good queens pay handsome profits in increased production and easier apiary management. We can furnish queens promptly at $1.00 each, 10, $9.00; 20, $17.00; 100, $80.00. This fine strain of Three-banded Italians is used by many leading beekeepers of the U.S and Canada. The production of good queens is our only business. 2000 three-frame mating nuclei from which to supply you. H. C. Short, Fitzpatrick, Ala.

FOR SALE—80 hives of bees, 10-frame, 2-story. No disease. With all modern equipment for a profitable extracting honey business. Hansen Honey Farms, 5002 No. 23 St., Omaha, Nebr. Telephone Ke. 4269.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Supplies, honey containers, and labels at a price saving to you. Top market price paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NO. WASHINGTON AVE. MINNEAPOLIS, MINNESOTA.

SEEDS

Study your conditions, plan for better BEE PASTURE. Free circular "SEEDS OF HONEY PLANTS". Pellett Gardens, Atlantic, Iowa.

Permanent PERENNIALS, SHRUBS, TRRES for your BEE PASTURE. Illustrated folder free. Nicollet County Nursery, St. Peter, Minn.

HELP WANTED

CAN USE another man in large bee business, experienced or inexperienced, good wages paid. M. E. Ballard, Roxbury, N. Y.

INSECTICIDES

PARADICHLOROBENZENE FOR WAX MOTH CONTROL. Send postal for delivered prices. Tritox Chemical Co., Washington, Ind.

BUSINESS OPPORTUNITIES

THE BEEMASTER — Free Copy, introducing "Scientific Beekeeping". Earthmaster Publications, Dept. 5, Box 547, Sun Valley, Calif.

MAGAZINES

WESTERN CANADA BEEKEEPER—Official organ of the Manitoba Beekeepers' Association. One year, $1.50; two years, $2.25; three years, $3.00. In combination with Gleanings in Bee Culture, $2.75. 211 Affleck Bldg., Winnipeg, Canada.

KNOW interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English, by the Bhupen Apiaries (Himalayas), Ramgarh, Dist. Naini Tal, U.P., India, or obtainable from them. Subs. Rs7/—or 10 shillings or 2.25 dollars per annum. Single copy Rs¼ s. 1/9 or 40 cents (International Money Order).

SOUTH AFRICAN BEE JOURNAL
Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

THE BEE WORLD—The leading journal of Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free 12 cents stamps. Membership in the Club including subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepman with more information on range sheep than any other magazine published. Subscription—$1.50. Hotel Cactus,, San Angelo, Texas.

Canada's
National Monthly Magazine
for Beekeepers
Canadian Bee Journal
54 Bloor St. W., Toronto 5, Ont.
U. S. Subscription Price,
only $1.75 per year.

Announcing
Northern Bred Queens

—at get acquainted prices: 85c each; $9.00 a dozen. Once more you can get gentle prolific, honey - gathering Gutekunst strain. Raised in the North for over 40 years.

Walter E. Van Horn
Sinclairville, New York

CAUCASIANS
CARNIOLANS

Both races gentle, prolific, best of workers. CAUCASIANS have the longest tongues of any race. CARNIOLANS often build up much more rapidly during unfavorable spring weather our northern states.

Gentle bees save time, patience, sweat, and work.

Over 25 years a queen breeder.
Prices: Untested queens, both races, $1.00 each. Tested, $1.75 each. Air Mail 5c extra per queen.

Albert G. Hann
Glen Gardner, New Jersey

QUEENS
Dark Three-Banded Italians
75c each for the
balance of this season
A. M. Peach
Baldwyn, Mass.

TOO LATE TO CLASSIFY

FOR SALE—Standard size supers, drawn comb. Gerald Dawson, 16192 Evergreen, East Detroit, Mich.

FIND WILD BEE TREES with my outfit. Grover, Bristol, Vermont.

BEES, BEEKEEPING equipment at reasonable costs, including 8-frame reversible extractor—$35.00; 75 Buckeye Hives, 5 healthy colonies, honey pump with motor, 10-frame full-depth and comb honey supers. John H. Anson, 35 Maple Ave., Sodus, New York.

FOR SALE—1948 crop of 135 60-lb. cans of fall honey with white included. Make me offer F.O.B. Naples, N. Y. S. Blanchard, Naples, N. Y.

ITALIAN QUEENS
Any Quantity
75c
Girardeau Apiaries
Tifton, Georgia

YELLOW ITALIAN QUEENS
We guarantee you young queens, live delivery, and a health certificate.
Queens are 50c each for July and August. For queens via Air Mail, add 6c to price of queen.
Oscar Arnouville
Box 35 Hamburg, La.

Queens, 45c
By Return Mail
3-Band Italians
3-lb. pkg. with queen $3.00
4-lb. pkg. with queen 4.00
Satisfaction Guaranteed
John A. Norman
Ramer, Ala. Rt. 1

Italian Queens
75 cents
Gold Leaf Apiaries
Jack Merwin, Hahira, Ga.

Three Band Italian
Package Bees and Queens
Jackson Apiaries
Funston, Ga.

FOR SALE
Italian package bees and queens
Health certificate and live delivery guaranteed.
LYNN WILLIAMS
Rt. 3 Oroville, Calif.

SAVE MONEY

Here's How . . . .

We have available at this time the following bee supplies which our inspectors have not passed as first line quality—these are the same as our pre-war mail order brand

These we offer you as "MAIL ORDER GRADE" at a considerable savings to you.

Shallow Frames in 100's only	$6.75 per carton
B-2 Metal Covers with inner covers, 5's	8.50 per carton
N-12 Delphos Veils	1.00 each
C-2 Full Depth Supers, empty, 5's	6.90 per carton
C-13 Shallow Supers, empty, 5's	4.30 per carton
D-2 Beeway Supers, empty, 5's	3.95 per carton
Standard Frames, in 100's only	8.35 per carton
ABC and XYZ of Bee Culture	2.50 each
(Very slightly damaged—does not affect value of book)	
H-3 50 sheets 3-Ply Foundation 8 x 16¾	7.00 per carton
H-4 200 sheets 3-Ply Foundation 8 x 16¾	27.00 per carton
H-18 200 sheets 3-ply Foudation 10⅛ x 16¾	35.25 per carton

AVAILABLE FROM MEDINA ONLY

Net cash with order — no discounts

We reserve the right to return your cash if our stock is exhausted when your order is received.

The A. I. Root Company Medina, Ohio

A METHOD OF SWARM CONTROL

(Continued from page 427)

old and young queens and both will continue functioning normally.

What next? That depends on you. What do you want? Two courses are open: You may convert the colony into a dual-queen colony and let both carry on for the rest of the year, adopting the usual dual-queen technic. In this case I suppose the upper bottom board might be replaced with a regular queen excluder and a hole bored in the back of "I" to take the place of the back entrance. Or, if the dual-queen colony is not desired, you may dispense with one queen, remove the upper bottom board, and convert "I" into a regular extracting super. These upper combs will soon be honey-filled and sealed.

The advantages of this method of mine are almost too obvious to need recounting, but permit me to mention a few:

First, no unwanted increase.

Second, no annoyance of afterswarming.

Third, no decrease in honey production. In fact, there may be an actual increase.

Fourth, conservation of equipment.

Fifth, easy and effective method of queen replacement. The old queen in "III" may be supplanted by the young queen in "I" with no danger of loss in introduction.

Sixth, a minimum of labor.

Prepare for the Future
Buy U. S. Savings Bonds

High Quality Italian Queens
75c each
10 or more, 65c each
Carlus T. Harper
New Brockton, Ala.

Northern Bred
Leather Colored Italian Queens
50c each
Air Mail if distance justifies
No charge for clipping
Diemer Bee Co.
Rt. 2 Box 7 Liberty, Mo.

Bees and Queens
ITALIANS CAUCASIANS
RESISTANT-STOCK
Daughters of Queens
bred for resistance.
We breed all three races
in separate yards.
Booking orders now for
1949 shipping.
Over 30 years a shipper
Send for Free Circulars
Blue Bonnet Apiaries
Weslaco, Texas

ATTENTION
Three-Banded
Italian Bees and Queens
Compare the price below with your honey prices and figure your gain. Even though prices have been cut to rock bottom you still get quality bees, full-weight packages, a health certificate, and live arrival guaranteed. Take advantage of this offer now.

2-lb. pkg. with queen,	$2.50
3-lb. pkg. with queen,	3.50
4-lb. pkg. with queen,	4.50
Queens, each	50c
Queens in 100 lots	45c

Farris Homan
Shannon, Mississippi

Whittle's
Leather Colored Italians
Get your Packages and Queens when you want them. Reserve 1949 Shipping Dates Early.
Write For Our 1949 Prices
On Package Bees and Queens
Our Bees and Service
Will Please You
G. E. Whittle
Star Route West
Greenville, Alabama

ASKED AND ANSWERED

(Continued from page 453)

pers on the hive at the time. This comb honey super did not keep the queen below. She went right on up through this comb honey super to occupy some of the combs in the extracting supers above.

Disposing of Combs of Granulated Honey

Question: I have about nine 10-frame supers full of honey all solid sugar. Is there any way to get it out without destroying the combs?—Thomas Luxi, Pa.

Answer: Just what to do with your granulated honey is somewhat of a question. Here is one thing to do: Use some of this honey for bee food. You could divide some of your strong colonies right away, permitting the queenless divisions to rear queens, or give the queenless divisions laying queens. This granulated honey, if fed to the bees at this season of the year, should become liquefied as the season advances and as the weather becomes warm. The heat of the brood chamber which is approximately 90 degrees, plus warm weather, should result in most of the honey being liquefied before fall comes. If you should have a reasonably good honey flow in your locality this summer it might be a little more difficult to get all of this honey worked over and liquefied by the bees before cool weather sets in because the bees would be storing fresh honey. However, if there is a dearth of nectar for a time in your locality, much of this granulated honey could be used for stores, and, as already stated, the bees would work it over gradually, especially strong hives of bees.

Bees Build Some Drone Cells

Question: Why do the bees build drone comb on foundation?—Arthur S. Tycer, La.

Answer: Once in a while bees will alter the midrib of worker comb foundation and substitute drone cells for worker cells. Just why the bees do this is not easily explained. Someone has said that a normal colony of bees will have at least 10 percent of drone cells. Some years ago our queen breeder Mel Pritchard said that in his opinion it would pay beekeepers to maintain drone comb in each colony of bees to give the queen a chance to lay unfertile eggs. There may be something to this. Normally a young queen should lay fewer unfertile or drone eggs than an old queen which is a good reason for having queens that are young.

Our American Beekeeping Federation

(Successor to National Federation of Beekeepers' Associations)

It is serving throughout the U.S.A. through the following committees:

(1) Honey and Pollen Plants Committee.
(2) Agricultural Relations Committee.
(3) Honey Grades Committee.
(4) Bee Breeders' Committee.
(5) Standardization of 5-gallon Can Caps Committee.
(6) Research Committee.

Help yourself by giving moral and financial support to our American Beekeeping Federation.

Send contributions to:

Sec.-Treas. Glenn O. Jones, Atlantic, Iowa

Italian Bees and Young Queens

June Prices:

2-lb pkg. with queen,	$2.40
3-lb. pkg. with queen,	3.00
Queens	.50

Homan Bros.

Rt. 2 Shannon, Miss

MOORE'S STRAIN

Away back in 1879 I commenced rearing Italian queens with the object of improvement constantly in view. By careful selection during all these years I have succeeded in producing a strain of three-banded leather colored Italian bees known as Moore's strain of Italians which has won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Send for descriptive circular and read reports from those who have tried them. Untested queens, $1.00 each; 12 or more, 75c each.

J. P. Moore, Falmouth, Ky.

Route 3
Former Address: Morgan, Kentucky
Safe arrival and satisfaction guaranteed

Little & Moore Apiaries

Originally
LITTLE'S APIARIES
The John M. Davis Strain
GUARANTEED TO PLEASE
or money refunded
April 15th to June 1st:
1 to 10, $1.25 each
June 1st to November 1st:
$1.00 each any number
Write for quantity prices

Little & Moore Apiaries
Shelbyville, Tenn.

Package Bee Buyers

Please accept our thanks for the business you have sent our way. We have done the best we could to serve you in a satisfactory manner by shipping according to your instructions.

Keep your attention on our advertising for next year. It will be to your advantage then and always.

Our season is closed for Packages, and Queens can be supplied only in small numbers unless arranged far in advance.

"They Produce"

Rossman & Long

P. O. Box 133, Moultrie, Ga

THRIFTY QUEENS
Three-Banded Italians
100, $50.00; 25 to 99, 60c each;
1 to 25, 70c each.
We can make immediate shipment.
REMEMBER—Thrifty bees are Guaranteed to please.
W. J. Forehand & Sons
Fort Deposit, Alabama
Breeders Since 1892

Three Banded
ITALIAN BEES AND QUEENS

2 lbs. with queen,	$3.50; 50 up, $3.35
3 lbs. with queen,	4.50; 50 up, 4.25
4 lbs. with queen,	5.50; 50 up, 5.00

Only 20% down to book your order, balance 15 days before shipping date. Health certificate and live delivery guaranteed with each shipment.
Address: CLOVER BEE FARMS
Hessmer, La.

We buy Amber and White Clover extracted Honey. Send sample, state quantity and best price, freight paid to Cincinnati.

THE FRED. W. MUTH CO.

229 WALNUT STREET CINCINNATI 2, OHIO
OUR REFERENCE—YOUR BANK

YORK'S

Package Bees and Queens
Quality Bred Italians

The Strain Preferred by Leading Honey Producers
Package bees with queens:

Quantity	1-24	25-99	100-up
2-lb.	$3.50	$3.25	$3.00
3-lb.	4.50	4.25	4.00
Queens	1.00	.85	.75

Queenless packages, deduct price of queen.

Enlarged facilities and increased production on high quality queens enable us to give you prompt service on any quantity. None better regardless of price.

York Bee Company
(The Universal Apiaries)
Jesup, Georgia, U.S.A.

HUMMER'S

Italian Queens

1 to 50 .... 75c
Over 50 ... 65c

Airmail postpaid
No charge for clipping

Geo. A. Hummer & Sons

Prairie Point, Mississippi
Established 1892

QUEENS

By Return Mail, 50c

2-lb. Package with queen $2.50
3-lb. Package with queen 3.50
Tested Queens 1.00

BRIGHT 3-Banded Italian. Guaranteed in every respect. Packages F.O.B. Express.

Norman Bros Apiaries
Ramer, Ala.

STOLLER'S Fine Quality Clover Honey 1948 crop, excellent for bottling. Stoller Honey Farms, Latty, Ohio.

ITALIAN QUEENS
Bred for business, Gentle, 52 years' breeding experience. Safe arrival.
Unt., $1.00; Sel. Unt., $1.25 each
I. F. Miller, Warren, Pa., R. 3

Better Bred Queens **Three Banded Italians**

Plenty good queens from our famous Better Bred Strains that have proved their merit for years. Replace all old and failing queens and watch them build up fast.

Queens, any quantity, 65c each. Prompt delivery.

Calvert Apiaries **Calvert, Ala.**

ITALIAN PACKAGES AND QUEENS

2-lb., $3.00; 3-lb., $4.00; 4-lb., $5.00; Queens, 65c
Guaranteed live delivery—clipped—airmail postpaid
Packages Express Collect

Sunkist Bee Company **Convent, La.**

For the best Honey Cans make a bee line to Continental

CONTACT THE NEAREST DISTRIBUTOR

PHOENIX, ARIZONA
Quick Seed & Feed Co.
Superior Honey Co.

ALAMEDA, CALIF.
G. T. Hansen Co.

ALHAMBRA, CALIF.
B-Z-B Honey Co.

COLTON, CALIF.
Western Honey Producers

LOS ANGELES, CALIF.
Bryant & Sawyer
Diamond Match Co.
Hamilton & Co.
Superior Honey Co.

SAN DIEGO, CALIF.
George B. Wright

DELTA, COLO.
Grover E. Turner

DENVER, COLO.
Bluhill Foods, Inc.

GREELEY, COLO.
L. R. Rice & Sons

MONTE VISTA, COLO.
John Haefeli

WENDALL, IDAHO
R. D. Bradshaw & Sons

CHICAGO, ILL.
The A. I. Root Company

HAMILTON, ILL.
Dadant & Sons

COUNCIL BLUFFS, IOWA
The A. I. Root Company

McGREGOR, IOWA
John Harnack & Sons

SIOUX CITY, IOWA
Sioux Honey Assn.
G. B. Lewis Company

PADUCAH, KENTUCKY
The Walter T. Kelley Co.

GRAND RAPIDS, MICH.
A. G. Woodman & Co.

ONSTED, MICH.
L. M. Hubbard Apiaries

MINNEAPOLIS, MINN.
Mondeng Mfg. Co.

MOORHEAD, MINN.
Northwestern Supply Co.

WINONA, MINN.
Robb Bros.

HIGGINSVILLE, MO.
Leahy Mfg. Co.

MANHATTAN, MONT.
Cloverdale Apiaries

ALBANY, NEW YORK
G. B. Lewis Company

GROTON, NEW YORK
Finger Lakes Honey
Prod. Coop. Inc.

SYRACUSE, NEW YORK
The A. I. Root Company

FARGO, N. D.
Magill & Co.

TOLEDO, OHIO
Alexander Company

SAN ANGELO, TEXAS
Bart Mann Co.

SAN ANTONIO, TEXAS
The A. I. Root Company

SALT LAKE CITY, UTAH
Miller Honey Co.

LYNCHBURG, VIRGINIA
G. B. Lewis Company

WATERTOWN, WISC.
G. B. Lewis Co.

POWELL, WYO.
A. D. Hardy

Continental Can Company, Inc.

ONE PAIR THAT CAN'T BE BEAT!

Timken Bearing Equipped

Although still limited in supply there are some Superior Lifetime Extractors and Capping Dryers still available. Place your order immediately at any of our branches if you want to receive either of these machines for use this season. Either machine can be furnished without a motor or complete with motor and motor mounting.

Superior Honey Company

3759 Wazee St., Denver, Colorado
349 Third St., Ogden, Utah
5201 District Blvd., Los Angeles, Calif.
Idaho Falls, Idaho
P. O. Box 3546, Phoenix, Arizona

Australasian Beekeeping News
The Leading Bee Journal of the Souther Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
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Write now to the Editor
P. O. Box 20, West Maitland
New South Wales, Australia

YELLOW ITALIAN QUEENS

2 lbs. with queen, $3.00; 3 lbs. with queen, $3.80; 4 lbs. with queen, $4.60. Queens, untested, 50c p.p.; 60c air mail. Tested queens, each, $1.00. No checks. M. O. only.

Plauche Bee Farm
Hamburg, La.

JUST NEWS

(Continued from page 457)

Copemish; and Ralph Blackman of Elk Rapids. We also expect Robert Dadant of Hamilton, Ill.; Alan Root and Charles Tollafield of Medina, Ohio; Arthur W. Kehl (G. B. Lewis Co.) of Watertown, Wis.; and other out-of-state guests at this northern meeting.

Remember the big drawing takes place at 4:00 on July 29 at Elk Rapids, Mich. Dinner reservations are being handled by Ralph Blackman of Elk Rapids, Mich. Dinner reservations should be requested from him direct before July 21 to avoid confusion.

* * * * *

Purdue University and the Indiana State Beekeepers' Association are planning a meeting for beekeepers during the annual summer Agricultural Conference on August 4.—B. Elwood Montgomery, Asso. Prof. of Entomology.

* * * * *

The Livingston, Wyoming, and Alleghany Beekeepers' Associations of New York will hold their summer meeting and picnic on July 30 at the home of L. N. Howden at Filmore, N. Y.—Earl H. Austin, Sec.

* * * * *

The Cuyahoga County Beekeepers' Association will meet at Jim Mobberley's, Parma, Ohio, July 24.

Wax Melter with V-ridge Construction

Save all of the honey of your cappings - Melts at low temperature as fast as uncapped. Welded construction stainless steel, aluminum, or galvanized.

A. H. Schmidt White Bear Lake, Minn.
Manufacturer of Metal Bee Hives

Summer Sale

First quality queens for remainder of the season at cost; also can supply package bees.

ITALIANS

First quality untested queens ..... $.50 any number
2-lb. Packages with queens ..... 2.50 any number
3-lb. Packages with queens ..... 3.00 any number
Tested queens ..... 1.00 any number

100 per cent satisfaction or money back

Merrill Bee Company Box 194 State Line, Miss.

QUEENS

One or One Thousand
Clipped or Not Clipped

Italians or Caucasians
Airmailed or Regular

If you need Queens or Package Bees of a proven honey gathering strain, reared by experienced men—GET STOVER'S

You Must Be Satisfied

	Queens	Packages with Queens			
Lots of		2 lb.	3 lb.	4 lb.	5 lb.
1-24	$.85	$3.25	$4.25	$5.25	$6.25
25-99	.75	3.00	3.95	4.90	5.85
100 up	.65	2.75	3.65	4.55	5.45

Tested Queens 75c Each Extra
For Queenless Package Deduct Price of Queen

The Stover Apiaries Mayhew, Miss.

BESSONET'S ITALIAN QUEENS

Check your hives this summer and fall and requeen with stock with universal appeal. We recommend the Ashurst shipping cage, but due to cost, add 5c extra per queen.
Prices: 1-24, 80c each; 25 or more, 75c each, AIRMAILED.
LEWIS-DADANT DEALER

Bessonet Bee Company Donaldsonville, La.

HARDY NORTHERN QUEENS
Due to early build-up of our bees this spring we offer after May 15th a limited number of pure Italian package bees of the same northern quality we successfully shipped to Sweden and China.
3 lb. package with young queen, $4.75
Untested queens, $1.00; Tested, 2.00
Health certificate with each shipment
Quick Service — Satisfaction
BARGER APIARIES, Carey, Ohio

HOLLOPETER'S QUEENS
By return mail. Hardy, hustling, honey-gathering strain of Italians which winter on summer stands with often 20-30 below zero. Good workers, easy to handle, and good to look at. Choice of light three-banded or extra light mated in separate yards. Untested queens, dollar each. Fifty years' experience back of each transaction and satisfaction guaranteed.
White Pine Bee Farms, Rockton, Pa.

Package Bees & Queens
2 lb. package bees with queen, $2.75
3 lb. package bees with queen, 3.75
Queens (postpaid) ..... .50
Guaranteed full weight and prompt shipping dates. Health certificate with each shipment.
Bayou Bee Co.
Rt. 1 Box 49 Montegut, La.

July first will end our 1949 shipping season and no further orders will be shipped after that date. Watch for our 1950 ads.
The Daniels Apiaries
Picayune, Miss.

CONGRATULATIONS

to the first prize winner for his answer
to the statement: I like DR queens because . . . . . .

"THEY OFFER THE BEST INSURANCE FOR PROFITABLE OPERATION"

Winning statement supplied by M. M. Moore,
1801 Falls Ave., Waterloo, Iowa.

Iowa Beekeepers' Association

State House Des Moines 19, Iowa

Announcing . . .

We have arranged to sell throughout the United States the famous line of Lewis Beeware and Dadant's foundation. Quantity discounts allowed. Write. Make up your order from Catalog and send direct to us. Catalog free. The best equipment at reasonable prices.

R. C. Daniels and Co. Picayune, Miss.

(An independent and separate service of The Daniels Apiaries)

Honey

Healthful..Delicious ..Highly Nutritious

The new slogan of the American Beekeeping Federation, now in use throughout the industry, was written by Mrs. Glenn N. Crawford of Humboldt, Iowa, and won first place in the Federation Slogan Contest. Remember to use it in your own advertising. Newspaper mats of the slogan (one inch high by two columns wide) may be obtained from the office of the Secretary of the Federation, Atlantic, Iowa, for 25c and will save you advertising expense. Order one now!

Leather Italians Caucasians

Queens, Any Number,

50c each, Guaranteed.

2 lb.	3 lb.	4 lb.
$2.75	$3.50	$4.50

Prices reduced to meet the conditions within our industry and help you stay in business.

We will ship packages only until June 20th. Queen shipments until Nov. 1st.

The Rich Honey Farms

Rich's All Italian Hybrid Disease Resistant

Queens

A New Type Bee

Northern Bred All Italian

This is a cross of pure Italian bees to produce a strong gentle bee that is superior in vigor and has positive resistance to American foulbrood. This stock is produced and maintained by northern honey producers at much expense. We help pay that cost.

Prices after May 20th:
1-24, $1.40; 24-99, $1.30
100-up, $1.15.

Jeanerette, La.

JENSEN'S

"Right Now Service" on Queens

The best weather, best floral conditions, best tested breeders, and our best efforts combine to produce the BEST QUEENS of the year NOW.

Your choice of two outstanding strains:

Our "Magnolia State" strain Italians with 30 years Selective Breeding, and popular acceptance.

From June 1st: 1-24, 85c each; 25 and up, 75c each.
Airmailed and clipped free if desired

NEW 3-Way "Hybrid" Disease Resistant Italian Queens with several generations of line breeding and instrumental insemination, then crossing of the best lines resulting in the "Hybrids". Every Breeder and Drone Mother has been tested for Disease Resistance. They are exceptionally vigorous and prolific, producing very populous colonies of great honey-gathering qualities. Treat yourself to some of these fine queens and learn what science is doing in the development of "BETTER BEES".

From June 1st: 1-24, $1.40; 25-99, $1.30; 100 up, $1.15 each.
Airmailed, clipped, and marked free, if desired

Jensen's Apiaries Macon, Miss.

"The business QUALITY built"

When ordering Italian bees and queens, remember TANQUARY'S quality, quantity, and service. We are here to serve and please you.

No. pkgs.	Queens	2-lb.	3-lb.	4-lb.	5-lb.
1-24	$.80	$3.50	$4.50	$5.50	$6.50
25-99	.70	3.25	4.25	5.25	6.20
100-up	.65	3.00	4.00	5.00	5.80

TESTED QUEENS, $2.00 each

Queenless Packages, deduct price of queen
Queens Postpaid — — —Packages F.O.B.
Western Union: Lena, S. C. Phone: Estill, S. C., No. 109

Tanquary Honey Farms, Inc. Lena, S. C.

WE OFFER YOU THE BEST

Our Quality 3-Banded Italian Queens are Fast Builders and Great Honey Gatherers.

1-24	75c
Over 24	65c

Our New 3-Way All Italian A.F.B. Resistant Queens are Bred in Isolated Mating Yard, from Outstanding Tested Parents

1-24	$1.40
25-100	1.30
Over 100	1.15

Air Mailed and clipped upon request

Garon Bee Company, Donaldsonville, La.